ATSDR

Milestone

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Was this a request Y

Request Narrative Dr. Jim Pearson, VA Div of Consolidated Laboratories director, called me to further discuss EPA's plans for this site. His phone number is 804-648-4480. I offered to set up a conference call with EPA and/or EPA's contractors and his staff.

Requester State Health

Date of Request 7/1/2004

Was this Followed-up with Y *reasonNotFollowedUp:*

Followup/Activity Participation Multi-Agency Meetings

Site Flow Laboratories, VA

Description of followup or activity

I facilitated a conference call with the VA state lab (Dr. Jim Pearson, Dr. Tom York, Dr. Lisa Weymouth, Dr. Judy Carrroll), Tetratech (b) (4) and ATSDR (Tom Stukas and me).

The property has been vacant since 1985. The state of VA requested EPA's assistance. There are 3 buildings on site, EPA has been in side only one of these buildings so far. It contained the ultralow temperature refrigerator. The site has been under investigation since 1998. Soil sampling in the past was only for primary pollutants, not biological entities.

OSC Guarni requested sampling at this site to see if any pathogens are still present, and he asked Kevin to focus on airborne and surface pathways. There are proposed plans for a development and a road to go through the animal burial zone at the site.

Dr. Pearson stated that there are not any viruses that could survive without a host for more than a few weeks at most. He said sampling for bacteria (as well as fungi and spores) at any location will detect bacteria. You couldn't link any positive detections with previous activities at the laboratory. He did not recommend sampling for anything beyond anthrax spores, and not even that unless there was evidence that the laboratory actually dealt with these spores. He strongly recommended that EPA not get involved in trying to clean up or "sterilize" a 150 acre property. He does not have any concerns about non-viables on this property, therefore respirable versus non-respirable fractions are a non-issue. He recommended fogging the place with formaldehyde and closing it down as one would normally proceed with a building contaminated with animal excreta. He also did not recommend test trenching in the animal burial area, again because no disease-causing agents would remain viable.

It is not clear whether DOH or Agriculture have been involved or contacted about this site.

Kevin said it was Paul Hermann at VA DEQ who felt the property looked 'abnormally sterile."

Dr. Pearson recommended having a microbiologist tour the facility and review the facility's catalogues. Kevin will send the catalog to Dr. Pearson, and will coordinate a site visit with his staff.

Date/time of followup or Activity 7/6/2004

Rep Lora Werner

Region: 3

ATSDR
US EPA Region III
1650 Arch Street (3HS00)
Philadelphia, PA 19103-2029

ORIGINAL

FIELD SAMPLING TRIP REPORT
MARCH 30 THROUGH APRIL 2, 1998

FOR

NEW RIVER STORAGE DEPOT (NRSD) SITE
(Radford Army Ammunition Plant)
PULASKI COUNTY, VIRGINIA

PREPARED FOR

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION III

ROC1, REGION III CONTRACT
EPA CONTRACT NUMBER 68-W6-0009
EPA WORK ASSIGNMENT NUMBER 23-54

Prepared by

GANNETT FLEMING, INCORPORATED
Harrisburg, Pennsylvania
with the assistance of

TechLaw, Inc.
Bala Cynwyd, Pennsylvania

DECEMBER 1998

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1.0 INTRODUCTION

1.1 SUMMARY

Gannett Fleming, Inc. (GF) and Techlaw, Inc. (TL) conducted sampling of environmental media at NRSD site of the Radford Army Ammunition Plant (RAAP) between March 30 and April 2, 1998. All work was conducted as described in the *Task Work Plan for Field Sampling, New River Storage Depot, Pulaski County, Virginia, March 1998* prepared by GF; deviations from the work plan are described in this trip report.

The purpose of the sampling event was to collect and analyze environmental samples from six areas of NRSD on property currently or formerly owned by the Army which were identified during a March 24 through March 26, 1997 site reconnaissance and a subsequent June 3 through June 5, 1997 field sampling event conducted by GF/TL. The data are required for the Army to move forward with prioritization of the facility for installation restoration.

Two distinct sampling efforts were undertaken: the collection of samples for offsite laboratory analysis for site characterization; and the utilization of field screening procedures for TNT/RDX and PCBs to screen areas of potential contamination.

- Samples collected for offsite laboratory analysis for site characterization consisted of shallow surface soils (less than one foot), surface water, sediments, sludges (e.g., sump sludge), aqueous wastes (e.g., sump water), and waste solids (e.g., "red anti-spark material") (Table 1). In general, the offsite analyses consisted of:

  - Target compound list (TCL) organics - analyzed by the EPA Region III Office of Analytical Services and Quality Assurance (OASQA) laboratory.

  - Target analyte list (TAL) metals (including cyanide) - analyzed by the OASQA laboratory.

  - Nitroaromatics and nitroglycerin - analyzed by Quanterra, Inc. under Delivery of Analytical Services (DAS) Case R3416.

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TABLE 1
SUMMARY OF SAMPLING LOCATIONS: MARCH 30 - APRIL 2, 1998
NEW RIVER STORAGE DEPOT, PULASKI COUNTY, VIRGINIA

Sample Number	Area	Parameters Analyzed						Sample Matrix
		TCL Volatiles	TCL BNA/Pest\PCB	Nitroaromatics\ Nitroglycerin	TAL Metals/ Mercury/Cyanide	Gross Alpha/Beta	Asbestos	
SS-11a	B - Igniter Area Bldg 8102-5				X			Surface Soil
SS-11b	B - Igniter Area Bldg 8102-5				X			Surface Soil
SS-12	B - Igniter Area Bldg 8102-6			X	X		X	Surface Soil
WS-03	B - Igniter Area Bldg 8102-6	X	X	X	X		X	Waste Solid
SS-08a	D - Rail Yard Platform 603	X	X	X	X			Surface Soil
SL-08	D - Rail Yard Platform 602	X	X	X	X			Sludge
SL-108[1]	D - Rail Yard Platform 602	X	X	X	X			Sludge
WW-04	D - Rail Yard Platform 603	X	X	X	X			Water
SS-14	E - Bag Loading Bldg 405	X	X	X	X			Surface Soil
WS-04	E - Bag Loading Bldg 405			X	X		X	Waste Solid
WS-05	E - Shipping Magazine 412			X	X		X	Waste Solid
WS-05D[1]	E - Shipping Magazine 412			X	X		X	Waste Solid
SW-07	G - NRSD Stream	X	X	X	X			Surface Water
SD-03	G - NRSD Stream	X	X	X	X			Sediment
SD-04	G - NRSD Stream	X	X	X	X			Sediment
SD-05	G - NRSD Stream	X	X	X	X			Sediment
SD-06	G - NRSD Stream	X	X	X	X			Sediment
SD-07	G - NRSD Stream	X	X	X	X			Sediment
SD-08	G - NRSD Stream	X	X	X	X			Sediment
SL-10	H - Bag Loading Bldg 464	X	X	X	X	X		Sludge
SL-110[1]	H - Bag Loading Bldg 464	X	X	X	X	X		Sludge

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NEW RIVER ORDNANCE PLANT

Preliminary Sampling results from June 97

Sample No./Id	Constituent of Concern	Concentration	
97060921			
WS-01			
(Bag Loading Area - E)	Barium	4,250	ppm
	Copper	59,600	ppm
	Lead	492	ppm
	Zinc	3,730	ppm
	Aroclor 1254	2	ppm
	Benzo(a)anthracene	14.7	ppm
	Benzo (a) pyrene	15.7	ppm
	Benzo (b) Fluoranthene	19.3	ppm
	Benzo (k) Fluoranthene	12.9	ppm
	Indeno(1,2,3-cd)pyrene	11	ppm
97060922			
WS-02			
(Burning Ground - C)	Lead	357	ppm
	Vanadium	94.3	ppm
97060924			
SL-05			
(Rail Yard)	Chromium	103	ppm
	Manganese	908	ppm
97060938			
SS-09			
(Bag Loading Area - E)	Barium	10,200	ppm
	Cadmium	41.8	ppm
	Copper	13,600	ppm
	Lead	1,970	ppm
	Zinc	5,940	ppm
	Aroclor 1254	7.5	ppm
97060940			
SS-11			
(Igniter Area - B)	Arsenic	85.8	ppm
	Barium	9,360	ppm
	Chromium	86.8	ppm

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NEW RIVER ORDNANCE PLANT

Preliminary Sampling results from June 97

Sample No./Id	Constituent of Concern	Concentration	
97060940			
SS-11			
(Igniter Area - B)	Copper	38,000	ppm
	Lead	1,040	ppm
	Zinc	21,800	ppm
97060943			
SS-03			
(Igniter Area - B)	Arsenic	25.2	ppm
	Copper	24,600	ppm

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TABLE 1: (Continued).

Sample Number	Area	Parameters Analyzed						Sample Matrix
		TCL Volatiles	TCL BNA/Pest\PCB	Nitroaromatics\ Nitroglycerin	TAL Metals/ Mercury/Cyanide	Gross Alpha/Beta	Asbestos	
SL-11	H - Bag Loading Bldg 464	X	X	X	X	X		Sludge
WW-06[2]	H - Bag Loading Bldg 464	X	X	X	X	X		Aqueous Waste
WW-106[1]	H - Bag Loading Bldg 464	X	X	X	X	X		Aqueous Waste
FB-01	H - Bag Loading Bldg 464	X	X	X	X	X		Aqueous Field Blank
RB-01	H - Bag Loading Bldg 464	X	X	X	X	X		Aqueous Rinsate Blank
SS-20	I - Bag Loading Bldg 445	X	X	X	X			Surface Soil
SS-21	I - Bag Loading Bldg 456	X	X	X	X			Surface Soil
FB-02	I - Magazine Bldg 447	X	X	X	X			Aqueous Field Blank
RB-02	I - Bag Loading Bldg 440	X	X	X	X			Aqueous Rinsate Blank
TB-01	NA	X						Aqueous Trip Blank
TB-02	NA	X						Aqueous Trip Blank

Notes: [1] Sample is a duplicate of previous sample.
[2] Sample was a MS/MSD.
NA Not applicable.

Select samples were also analyzed offsite for:

- Gross Alpha/Gross Beta - analyzed by Quanterra, Inc. under DAS Case R3417.

- Asbestos - analyzed by the State of Maryland, Division of Environmental Chemistry Laboratory under DAS Case R3430.

- Field screening procedures utilizing TNT/RDX and PCB field test kits were employed to screen areas of potential contamination (Table 2). Field test kit analyses were conducted by GF personnel in the field as soon after sample collection as possible. A portion of some of the samples was sent for confirmatory analysis by the offsite laboratories noted above.

Project documentation used to prepare this report included field log books, photographs, sample chain-of-custody (COC) forms, and sample location maps. A record of all field activities was maintained in field log books. The log book entries document sampling locations and designations, descriptions of sampling matrices, and a summary of field techniques employed. The log book entries also document the date, time, and subject matter of photographs taken during the sampling event. Sample locations were flagged during the sampling activity and locations were referenced to permanent site features. These locations are shown on the site maps provided in this report.

This trip report includes documentation of field activities during this sampling event in the report text and three appendices. Appendix A contains the photograph log for the field sampling activities for samples collected for offsite laboratory analysis, and Appendix B contains the photograph log for the field screening sampling program. Appendix C provides a site location map and maps of each of the six site areas sampled. Appendix D contains detailed sketches documenting the location of the individual sampling points.

Attachment 1 contains copies of the field log books, Attachment 2 contains copies of the sample COCs and the sample shipping airbills, Attachment 3 provides the results of the field screening analyses, and Attachment 4 provides a data summary tabulation for NRSD which includes sampling results from both the June 3 through June 5, 1997, sampling event and the

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TABLE 2
SUMMARY OF FIELD TEST KIT AND CONFIRMATORY SAMPLING LOCATIONS
MARCH 30 - APRIL 2, 1998
NEW RIVER STORAGE DEPOT, PULASKI COUNTY, VIRGINIA

Sample Number	Area	Parameters Analyzed					Sample Matrix
		TNT Field Kit	RDX Field Test Kit	Confirmatory Nitroaromatics\ Nitroglycerin	PCB Field Test Kit	Confirmatory TCL BNA/Pest/PCB	
TR-01A	B - Igniter Area				X	X	Surface Soil
TR-01B	B - Igniter Area				X	X	Surface Soil
TR-01C	B - Igniter Area				X		Surface Soil
TR-01D	B - Igniter Area				X		Surface Soil
SS-12	B - Igniter Area Bldg 8102-6	X	X	X			Surface Soil
SS-12A	B - Igniter Area Bldg 8102-6	X	X				Surface Soil
SS-12B	B - Igniter Area Bldg 8102-6	X	X				Surface Soil
SS-12C	B - Igniter Area Bldg 8102-6	X	X	X			Surface Soil
TR-02A	D - Rail Yard				X	X	Surface Soil
TR-02B	D - Rail Yard				X		Surface Soil
TR-02C	D - Rail Yard				X	X	Surface Soil
SS-08A	D - Rail Yard Platform 603	X	X	X			Surface Soil
SS-08AA	D - Rail Yard Platform 603	X	X				Surface Soil
SS-08AB	D - Rail Yard Platform 603	X	X				Surface Soil
SS-08AC	D - Rail Yard Platform 603	X	X				Surface Soil
TR-03A	E - Bag Loading Bldg 400				X		Surface Soil
TR-03B	E - Bag Loading Bldg 400				X		Surface Soil
TR-03C	E - Bag Loading Bldg 400				X		Surface Soil
TR-03D	E - Bag Loading Bldg 400				X		Surface Soil
TR-03E	E - Bag Loading Bldg 400				X	X	Surface Soil

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TABLE 2: (Continued).

Sample Number	Area	Parameters Analyzed					Sample Matrix
		TNT Field Kit	RDX Field Test Kit	Confirmatory Nitroaromatics\ Nitroglycerin	PCB Field Test Kit	Confirmatory TCL BNA/Pest/PCB	
TR-03F	E - Bag Loading Bldg 400				X		Surface Soil
SS-13A	E - Bag Loading Bldg 412	X	X				Surface Soil
SS-13B	E - Bag Loading Bldg 412	X	X	X			Surface Soil
SS-13C	E - Bag Loading Bldg 412	X	X	X			Surface Soil
SS-14	E - Bag Loading Bldg 405	X	X	X			Surface Soil
SS-15A	E - Bag Loading Bldg 405	X	X				Surface Soil
SS-15B	E - Bag Loading Bldg 405	X	X	X			Surface Soil
SS-15C	E - Bag Loading Bldg 405	X	X	X			Surface Soil
SS-15D	E - Bag Loading Bldg 405	X	X				Surface Soil
TR-04A	H - Bag Loading Bldg 464				X	X	Surface Soil
TR-04B	H - Bag Loading Bldg 464				X		Surface Soil
TR-04C	H - Bag Loading Bldg 464				X		Surface Soil
TR-04D	H - Bag Loading Bldg 464				X		Surface Soil
TR-04E	H - Bag Loading Bldg 464				X	X	Surface Soil
TR-04F	H - Bag Loading Bldg 464				X	X	Surface Soil
TR-04FD[2]	H - Bag Loading Bldg 464				X	X	Surface Soil
SS-17A	H - Magazine Bldg 466	X	X				Surface Soil
SS-17AD[1]	H - Magazine Bldg 466	X	X				Surface Soil
SS-17B	H - Magazine Bldg 466	X	X				Surface Soil
SS-17C	H - Magazine Bldg 466	X	X				Surface Soil
SS-17D	H - Magazine Bldg 466	X	X				Surface Soil
SS-17E	H - Magazine Bldg 466	X	X				Surface Soil

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TABLE 2: (Continued).

Sample Number	Area	Parameters Analyzed					Sample Matrix
		TNT Field Kit	RDX Field Test Kit	Confirmatory Nitroaromatics\ Nitroglycerin	PCB Field Test Kit	Confirmatory TCL BNA/Pest/PCB	
SS-17ED[1]	H - Magazine Bldg 466	X	X				Surface Soil
TR-05A	H - Bag Loading Bldg 465-A				X	X	Surface Soil
TR-05B	H - Bag Loading Bldg 465-A				X	X	Surface Soil
TR-05C	H - Bag Loading Bldg 465-A				X		Surface Soil
TR-05D	H - Bag Loading Bldg 465-A				X	X	Surface Soil
TR-05E	H - Bag Loading Bldg 465-A				X		Surface Soil
TR-05F	H - Bag Loading Bldg 465-A				X		Surface Soil
TR-05G	H - Bag Loading Bldg 465-A				X		Surface Soil
TR-05H	H - Bag Loading Bldg 465-A				X		Surface Soil
SS-16A	H - Magazine Bldg 467	X	X				Surface Soil
SS-16B	H - Magazine Bldg 467	X	X				Surface Soil
SS-16BD[1]	H - Magazine Bldg 467	X	X				Surface Soil
SS-16C	H - Magazine Bldg 467	X	X				Surface Soil
SS-16D	H - Magazine Bldg 467	X	X				Surface Soil
SS-16E	H - Magazine Bldg 467	X	X				Surface Soil
SS-16ED[1]	H - Magazine Bldg 467	X	X				Surface Soil
TR-09A	H - Bag Loading Bldg 464				X		Surface Soil
TR-09B	H - Bag Loading Bldg 464				X	X	Surface Soil
TR-09C	H - Bag Loading Bldg 464				X		Surface Soil
TR-07A	I - Bag Loading Bldg 445				X	X	Surface Soil
TR-07B	I - Bag Loading Bldg 445				X		Surface Soil
TR-07C	I - Bag Loading Bldg 445				X	X	Surface Soil

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TABLE 2: (Continued).

Sample Number	Area	Parameters Analyzed					Sample Matrix
		TNT Field Kit	RDX Field Test Kit	Confirmatory Nitroaromatics\ Nitroglycerin	PCB Field Test Kit	Confirmatory TCL BNA/Pest/PCB	
TR-07D	I - Bag Loading Bldg 445				X		Surface Soil
TR-07E	I - Bag Loading Bldg 445				X		Surface Soil
TR-07F	I - Bag Loading Bldg 445				X		Surface Soil

Notes: [1] Sample is a duplicate of previous sample for the field test kit analysis only.
[2] Sample is a duplicate of previous sample for the offsite confirmation analysis only.

current March 30 through April 2, 1998, sampling event. Attachment 5 contains portions of the trip report for the first sampling round conducted June 3 through June 5, 1997.

2.0 SITE OBSERVATIONS

2.1 PERSONS CONTACTED

2.1.1 Prior to the Field Trip

Mr. Robert Davie
USAEC
Radford Army Ammunition Plant
Radford, VA 24141
540-635-7612

Mr.Devlin Harris
Virginia Department of Environmental Quality
Division of Waste Operations
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(b) (4)
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5400 Reserve Way
Dublin, VA 24084
540-674-5320

2.1.2 At the Site

Mr. Robert Richardson
ACO/RAAP
P.O. Box 2
Radford, VA 24141
540-639-8641

Mr. Robert Davie
USAEC
Radford Army Ammunition Plant
Radford, VA 24141
410-671-1616

Mr. Doug Day, Safety Officer
Radford Army Ammunition Plant
Radford, VA 24141

(b) (4)
Alliant TechSystems, Inc.
P.O. Box 99
Radford, VA 24141
540-639-8220

2.2 WEATHER CONDITIONS

The following paragraphs summarize weather observations for each day of sampling.

March 30, 1998: Clear and sunny with little to no wind. The temperature ranged from approximately 65° F up into the 80s.

March 31, 1998 Clear and sunny with little to no wind. The temperature was approximately 85° F.

April 1, 1998: Rainy in the morning but cleared by the afternoon with a 10 mph wind. The temperature was approximately 70° F.

April 2, 1998: Clear and sunny with little wind. The temperature was in the 80s.

3.0 SAMPLING

3.1 AREA B - IGNITER AREA

3.1.1 Samples collected for offsite analysis.

The area was vegetated heavily with dry grass and sparsely with pine trees. Nine former igniter buildings were observed in this area.

SS-11a: Surface soil sample collected from an area on the east side of the fourth igniter building (Building 8102-5), counted from the west while facing south looking at the buildings. This sample was a surface soil sample (0 to 2 inches below ground surface [bgs]) collected from a point approximately 8 inches out from the concrete pad of the building at approximately the fifth divider (concrete wall) from the south end of the building (Photographs A-1 and A-2; Figure D-1). The soil consisted of a red, fine, sandy silt and included significant amounts of dry organic material.

SS-11b: Surface soil sample collected from an area on the east side of the fourth igniter building (Building 8102-5), counted from the west while facing south looking at the buildings. A surface soil sample (0 to 2 inches bgs) was collected approximately 6 inches out from the concrete pad of the building at approximately the ninth divider from the south end of the building (Photographs A-3 and A-4; Figure D-2). The soil consisted of a red, fine, sandy silt and included significant amounts of dry organic material.

SS-12: Surface soil sample collected from an area on the east side of the third igniter building (Building 8102-6), counted from the west while facing south looking at the buildings. A surface soil sample (0 to 2 inches bgs) was collected from a point approximately 6 inches out from the concrete pad of the building at approximately the fourth divider from the south end of the building (Photographs A-5 and A-6; Figure D-3). The soil consisted of a red, fine, sandy silt and included significant amounts of dry organic material.

WS-03: Surface waste solid sample collected from the northern four bays on the east side of the third igniter building (Building 8102-6), counted from the west while facing south looking at the buildings (Figure D-4). The sample consisted of a coating on the igniter building ("red anti-spark material") which was a dull red in coloration and contained white fibers. This material was dry and created considerable dust when chipped and flaked off the concrete.

3.1.2 Samples collected for PCB field screening.

The samples collected for PCB field screening were from the location of a fallen utility pole on top of the hill to the north of the igniter buildings (Photographs B-1and B-2; Figure D-5). No transformer was visible. The location was just east of building line extended of the fifth igniter building (Building 8102-4), counted from the west while facing south looking at the buildings. The soil was a dark brown, damp clay-silt. The area was vegetated heavily with grasses which had been recently mowed.

TR-01A: Surface soil sample (1 to 2 inches bgs) collected from the depression caused by the former utility pole.

TR-01B: Surface soil sample (1 to 2 inches bgs) collected from southwest of the depression.

TR-01C: Surface soil sample (1 to 2 inches bgs) collected near the base of the fallen utility pole near the depression.

TR-01D: Surface soil sample (1 to 2 inches bgs) collected from southeast of the depression and base of the fallen utility pole.

3.1.3 Samples collected for TNT/RDX field screening.

The samples collected for TNT/RDX field screening were from the vicinity of the SS-12 sampling location described above (Photographs A-5, A-6, A-7, B-1, and B-3; Figure D-6).

SS-12: A surface soil sample (0 to 2 inches bgs) collected at the location of SS-12 described above.

SS-12A: A surface soil sample (1 to 2 inches bgs) collected approximately 18 feet south of SS-12 at the interior corner formed by the building's concrete pad. The ground had a red surface stain from the "red anti-spark material"; the sample consisted of a gray, organic soil beneath the red staining.

SS-12B: A surface soil sample (3 to 4 inches bgs) collected beneath the SS-12A sample. The soil was a brown clay layer; some red matter was present.

SS-12C: A surface soil sample (3 to 4 inches bgs) collected approximately 15 feet east of the concrete pad of the building on a line approximately perpendicular to the concrete pad at the SS-12 sampling location. The soil consisted of an orange clay.

3.1.4 Samples collected for confirmatory analysis.

After conducting the field screening analyses, confirmatory samples were collected for PCBs (BNA/Pest/PCB) from sampling locations TR-01A and TR-01B, and for nitroaromatics and nitroglycerin from sampling locations SS-12 and SS-12C.

3.2 AREA D - RAIL YARD

3.2.1 Samples collected for offsite analysis.

The ground surface in this area was rocky and lightly vegetated with dry grass.

WW-04: Surface water sample collected from pooled water under transfer platform 603 (Photograph A-8; Figure D-7). The sample was collected through a screened window located at the east end of the platform. The water was clear with very little suspended solids. Field parameters measured were temperature (14.7°C), pH (7.95), and conductivity (0.196 mOhms/cm).

SS-08a: Surface soil sample collected from the north side of transfer platform 603 (Photographs A-9 and A-10; Figure D-8). A surface soil sample (3 to 6 inches bgs) was collected from a point half way between the platform and rails just east of the midpoint of the platform. The sample consisted of a orange-brown, very plastic clay.

SL-08: Sludge sample collected from under transfer platform 602 through a screened window at the east end using a polyethylene bottle connected to an extension rod (Photograph A-11; Figure D-9). The sludge sample was a reddish-brown, cohesive, silty clay.

SL-108: This sample was a duplicate of SL-08.

3.2.2 Samples collected for PCB field screening.

The samples collected for PCB field screening were from the location of a standing utility pole (number T8-57) with a transformer (Photograph B-4; Figure D-10). The utility pole was located near the top of the slope to the south of Calhoun Road. The location was directly across from the easternmost blast mound. The soil was a dark brown, damp clay-silt. The area was vegetated heavily with grasses which had been recently mowed.

TR-02A: Surface soil sample (0 to 2 inches bgs) collected approximately two feet east of the base of the utility pole.

TR-02B: Surface soil sample (0 to 2 inches bgs) collected approximately two feet southeast of the base of the utility pole.

TR-02C: Surface soil sample (0 to 2 inches bgs) collected at the base of the southeast side of the utility pole.

3.2.3 Samples collected for TNT/RDX field screening.

The samples were collected approximately one foot from the north side of transfer platform 603, along the length of the platform (Photographs A-9, A-10, and B-5; Figure D-11). The upper 3 to 4 inches was composed of railroad bed crushed stone mixed with dark brown organic material. The samples were collected from the orange-brown, very plastic clay which underlay the stone layer.

SS-08A: Surface soil sample (3 to 6 inches bgs) collected at the location of SS-08a described above.

SS-08AA: Surface soil sample (3 to 6 inches bgs).

SS-08AB: Surface soil sample (3 to 6 inches bgs).

SS-08AC: Surface soil sample (3 to 6 inches bgs).

3.2.4 Samples collected for confirmatory analysis.

Sample SS-08a for offsite laboratory analysis was collected concurrently with sample SS-08A for TNT/RDX screening. After conducting the field screening analyses, confirmatory samples were collected for PCBs (BNA/Pest/PCB) from sampling locations TR-02A and TR-02C.

3.3 AREA E - BAG LOADING AREA

3.3.1 Samples collected for offsite analysis.

SS-14: Surface soil sample collected from a point approximately 20 feet northeast of the corner of Bag Loading Building 405 (Photographs A-12, A-13, B-8, and B-9; Figure D-12). The immediate area appeared to be a drainage swale located between the building and a gravel runway north of the building. The sampling location was vegetated with dried grass; a variety of trees were scattered nearby. This sample was a surface soil sample (0 to 2 inches bgs); the soil was a tan, silty clay.

WS-04: Surface waste solid sample collected at Bag Loading Building 405 from the bay area floor inside the sixth door counting from the west while facing south (Figure D-13). The sample consisted of a coating on the bag loading concrete floor ("red anti-spark material") which was a dull red in coloration and contained white fibers. This material was dry and flaky; large pieces readily broke off the floor.

WS-05: Surface waste solid sample collected at Shipping Magazine 412 (Figure D-14). At the time of sampling, Building 412 consisted of a raised concrete pad with no walls or roof. The sample consisted of a coating on the concrete floor ("red anti-spark material") which was a dull red in coloration and contained white fibers. This material was dry and flaky; large pieces readily broke off the floor.

3.3.2 Samples collected for PCB field screening.

The samples collected for PCB field screening were from the vicinity of a suspected former utility pole (Photograph B-6; Figure D-15). The area was located northeast of Bag Loading Building 405. The utility pole was not located, however, a sign labeled "22" was present. The sign was similar to those observed to be placed near other utility poles with transformers attached. Historical maps indicate a transformer was located in this area. The following samples were collected from soil between 6-inch grass hummocks.

TR-03A: Surface soil sample (0.5 to 2 inches bgs) consisting of dark brown soil with some clay and low organic content.

TR-03B: Surface soil sample (0.5 to 2 inches bgs) consisting of dark brown soil with some clay and low organic content.

TR-03C: Surface soil sample (0.5 to 2 inches bgs) consisting of dark brown soil with moderate organic content.

TR-03D: Surface soil sample (0.5 to 2 inches bgs) consisting of brown clayey soil. This location was at the centerline of a roadside drainage ditch.

TR-03E: Surface soil sample (0.5 to 2 inches bgs) consisting of dark brown clayey soil.

TR-03F: Surface soil sample (0.5 to 2 inches bgs) consisting of dark brown clayey soil.

3.3.3 Samples collected for TNT/RDX field screening.

An area at Bag Loading Building 405, sampling location SS-14 (collected concurrently with offsite laboratory analyses sample), and an area at Shipping Magazine 412 were screened for TNT/RDX.

The samples at Bag Loading Building 405 were collected outside the bay in which sample WS-04 was collected (Photograph B-10; Figure D-13). Two samples were collected approximately 1 foot north of the concrete floor of the building, and two samples were collected approximately 6 feet north of the floor; each pair of samples was approximately 8 feet apart.

SS-15A: Surface soil sample (0.5 to 2 inches bgs) consisting of a loose, low-density, red soil.

SS-15B: Surface soil sample (0.5 to 2 inches bgs) consisting of a loose, low-density, bright red soil.

SS-15C: Surface soil sample (0.5 to 2 inches bgs) consisting of dark brown organic soil with some gravel.

SS-15D: Surface soil sample (0.5 to 2 inches bgs) consisting of dark brown clayey soil.

The samples obtained at Shipping Magazine 412 were collected from the west side of the former building near the south end (Photograph B-7; Figure D-14). This location appeared to be an area of stressed vegetation.

SS-13A: Surface soil sample (0 to 3 inches bgs) consisting of very dry, orange clay. The location was bare soil (no vegetation).

SS-13B: Surface soil sample (0 to 3 inches bgs) consisting of very dry, orange clay. The location was in an area of drainage for runoff from the foundation of Shipping Magazine 412.

SS-13C: Surface soil sample (0 to 3 inches bgs) consisting of very dry, brown-orange clay. The location was in an area of drainage for runoff from the foundation of Shipping Magazine 412.

3.3.4 Samples collected for confirmatory analysis.

Sample SS-14 for offsite laboratory analysis was collected concurrently with sample SS-14 for TNT/RDX field screening. After conducting the field screening analyses, confirmatory samples were collected for PCBs (BNA/Pest/PCB) from sampling location TR-03E, and for nitroaromatics and nitroglycerin from SS-13B, SS-13C, SS-15B, and SS-15C.

3.4 AREA G - NRSD STREAM AREA

3.4.1 Samples collected for offsite analysis.

The surrounding land in the vicinity of sampling locations SD-03, SD-04, and SD-05 is less hilly than the downstream area (SD-06, SD-07, SW-07, and SD-08). Area G was vegetated with dry grass and various trees. The stream region consists of several stream segments and tributaries. The area does not include good points of reference, therefore, detailed maps are not available.

SD-03: Sediment sample collected from the stream that runs perpendicular (north/south) to Eustis Road and the 4-barrel culvert (Photograph A-22,

A-23; Figure D-16). The sediment consisted of a brown, gravelly, silty sand with shells.

SD-04: Sediment sample collected at the southeast edge of a bend in the stream which runs parallel (east/west) to Eustis Road. The sediment sample was collected from a point approximately 400 feet south of the 4-barrel culvert (Photographs A-20 and A-21; Figure D-17). The sediment consisted of both a brown, gravelly, silty sand and a gray, clayey silt.

SD-05: Sediment sample collected upstream of the waste piles near the intersection of Alger Road, Avenue A, and 11th Street. The sediment sample was collected 20 feet southeast of the confluence of two streams from a point approximately 300 feet southeast of the 2-barrel culvert and 75 feet south of a 1-barrel culvert (Photographs A-24 and A-25; Figure D-18). The stream was dry and filled with emergent vegetation. The sediment collected consisted of a brown, silty clay with organic matter.

SD-06: Sediment sample collected upstream of the confluence with the tributary and upstream of sample location SW-07 and SD-07 (Photographs A-18 and A-19). The sediment collected consisted of a brown, silty, fine sand.

SD-07: Sediment sample collected downstream of the confluence with the tributary that runs by the waste piles (and the sample SD-08 location) approximately 10 feet upstream of the SW-07 sampling location. The sampling location was at a bend in the stream where there was obvious deposition (Photograph A-17). The stream at this location was approximately 5 feet wide and 2 feet deep. The sediment collected consisted of a brown, silty, fine sand.

SW-07: Surface water sample collected approximately 10 feet downstream of the SD-07 sampling location. The surface water sample was collected in an empty polyethylene bottle (Photograph A-16). The sample was clear with no visible suspended solids. Field parameters measured were temperature (19.9° C), pH (7.64), and conductivity (0.497 mOhms/cm).

SD-08: Sediment sample collected downstream of the waste piles (tar babies) in a dry vegetated tributary (Photograph A-14) approximately 30 feet east of deer stand #53 (Photograph A-15). The sediment sample consisted of a brown, sandy silt.

3.4.2 Samples collected for PCB field screening.

No PCB field screening was conducted in Area G.

3.4.3 Samples collected for TNT/RDX field screening.

No TNT/RDX field screening was conducted in Area G.

3.4.4 Samples collected for confirmatory analysis.

No PCB or TNT/RDX field screening was conducted in Area G, therefore, no confirmatory samples were collected.

3.5 AREA H - BAG LOADING AREA

3.5.1 Samples collected for offsite analysis.

The sampling area consisted of the L-shaped former Flow Laboratory animal serum building (Bag Loading Building 464). The surrounding land was vegetated with grass and various trees.

FB-01: Field blank sample collected in the grassy area at the east end of the building (Photograph A-26; Figure D-19). Reagent grade water was used for the preparation of samples for organic analyses, and deionized and ultra filtered (DIUF) water was used for the preparation of samples for inorganic and radiological analyses.

RB-01: The rinsate blank was prepared by running the reagent grade water and DIUF water over the decontaminated surface water sampling apparatus and into a clean stainless steel bowl with a clean trowel, clean spoon, and clean putty knife before pouring into the bottleware (Photograph A-27; Figure D-19).

WW-06: Aqueous waste sample collected from the sump at the northeast end of the building (Photographs A-28 and A-29; Figure D-19). The water sample was collected using a polyethylene bottle connected to an extension rod. The water collected was clear with some black suspended solids. Field parameters measured were temperature (10.1°C), pH (7.10), and conductivity (2.78 mOhms/cm).

WW-106: Duplicate sample of WW-06.

SL-11: Sludge sample collected from the sump at the northeast end of the building (sampling location for WW-06) (Photographs A-29 and A-30; Figure D-19). The sludge sample was collected using the water collection apparatus to scoop sludge off the floor of the sump. The sludge collected consisted of black, sandy silt with a slight oily sheen.

SL-10: Sludge sample collected from an outfall on the northwest side of the building approximately 300 feet northwest of the feed rooms

(Photographs A-31, A-32, and A-33; Figure D-20). The sediment collected consisted of a reddish fat clay mixed with top soil.

SL-110: Duplicate of SL-10.

3.5.2 Samples collected for PCB field screening.

PCB field screening was conducted at three locations in Area G: north of Bag Loading Building 464, south of Bag Loading Building 465-A, and south of Bag Loading Building 464 along a wire fence.

The area located north of Bag Loading Building 464 was an area of fallen utility poles and equipment (Photograph B-11; Figure D-21). Two poles appeared to have been deliberately sawed off. Electrical debris, such as ceramics and three metal box-like objects, were strewn about the area. A sign labeled "29" is located near the cut off poles. No transformer was identifiable.

TR-04A: Surface soil sample (0.5 to 2 inches bgs) collected at the base of former Pole 2.

TR-04B: Surface soil sample (2 inches bgs) collected in a small drainage swale downgradient of Pole 1 and Pole 2. The soil was sandy underlain by clay; the sample was comprised of both the sand and the clay strata.

TR-04C: Surface soil sample (0.5 to 2 inches bgs) collected in a depositional area approximately 8 feet northeast of sample TR-04B. The soil was a brown clay.

TR-04D: Surface soil sample (0.5 to 2 inches bgs) collected near a segment of fallen utility pole in a low area.

TR-04E: Surface soil sample (0.5 to 2 inches bgs) collected in the area of the three metal box-like objects between Box 1 and Box 2. The soil was a gray clay.

TR-04F: Surface soil sample (0.5 to 2 inches bgs) collected on the north side of a segment of fallen utility pole approximately 2 feet north of sample TR-04D.

The area south of Bag Loading Building 465-A is composed of at least 3 former utility poles (Photograph B-12; Figure D-22). Pole 1, labeled TS-208, was intact except it was cut halfway up the pole. Pole 2 (unlabeled) is on the ground lying toward the southeast. Pole 3, labeled TS-207, is splintered and lies toward the southwest. A sign labeled "208" is also present. The standing portion of Pole 1 has a sign on it that reads "Danger High Voltage". No clear evidence of a transformer is present among the debris.

TR-05A: Surface soil sample (0.5 to 2 inches bgs) collected approximately 2 feet northwest of standing Pole 1, from between the standing portion of Pole 1 and the fallen portion of Pole 2, consisted of dark brown clay.

TR-05B: Surface soil sample (0.5 to 2 inches bgs) collected approximately 2 feet south of standing Pole 1.

TR-05C: Surface soil sample (0.5 to 2 inches bgs) collected approximately 4 feet southwest of TR-05B.

TR-05D: Surface soil sample (0.5 to 2 inches bgs) collected approximately 3 feet northeast of standing Pole 1 immediately south of a tree.

TR-05E: Surface soil sample (0.5 to 2 inches bgs) collected from under the crossbars connected to fallen Pole 1 and fallen Pole 2, approximately 3 feet northeast of TR-05F.

TR-05F: Surface soil sample (0.5 to 2 inches bgs) collected between fallen Pole 1 and fallen Pole 2 near the crossbars and approximately 15 feet northeast of standing Pole 1.

TR-05G: Surface soil sample (0.5 to 2 inches bgs) collected near ceramic debris approximately 8 feet northeast of TR-05E.

TR-05H: Surface soil sample (0.5 to 2 inches bgs) collected at the base of standing Pole 1 on northeast side.

The PCB screening samples were located to the south of Bag Loading Building 464 along a wire fence consisted of an intact utility pole with two transformers, one on the north side and one on the south side (Photograph B-15; Figure D-23). The pole was labeled "APCO" and is numbered "476-423".

TR-09A: Surface soil sample (0.5 to 2 inches bgs) collected at the base of a fencepost north of the utility pole. The soil was brown clay.

TR-09B: Surface soil sample (0.5 to 2 inches bgs) collected at the base of the utility pole.

TR-09C: Surface soil sample (0.5 to 2 inches bgs) collected along the wire fence line approximately 3 feet south of the utility pole.

3.5.3 Samples collected for TNT/RDX field screening.

TNT/RDX field screening was conducted at two locations in Area G: the loading dock area of Magazine Building 466 and the loading dock area of Magazine Building 467. The entire sampling areas for both buildings was underlain by a very hard gravel layer or asphalt which prevented sampling at depth. The only locations soft enough to sample were along the edges of the former concrete support pylons for the connecting

walkways (the walkways no longer exist) or adjacent to the buildings. A sampling depth of 1 to 2 inches was used to try to sample beneath any litter which may have accumulated since the closure of the buildings.

The samples collected in the loading dock area of Magazine Building 467 were (Photograph B-13; Figure D-24):

SS-16A: Surface soil sample (0 to 1.5 inch bgs) consisted primarily of dark brown organic material.

SS-16B: Surface soil sample (0 to 1.5 inches bgs) collected approximately 2 inches northeast of a concrete block support pier consisted of brown clayey soil.

SS-16C: Surface soil sample (0 to 1.5 inches bgs) collected approximately 1 inch south of a concrete block support pier consisted of dark brown clayey soil.

SS-16D: Surface soil sample (0 to 1.5 inches bgs) collected approximately 6 inches northeast of a concrete block support pier consisted of dark gray clayey soil.

SS-16E: Surface soil sample (0.5 to 2 inches bgs) collected approximately 1.5 feet south of the end of the blast wall. This location did not have the gravel layer. The soil consisted of dark brown clay.

The samples collected in the loading dock area of Magazine Building 466 were (Photograph B-14; Figure D-25):

SS-17A: Surface soil sample (0.5 to 1.5 inches bgs).

SS-17B: Surface soil sample (0.5 to 1.5 inches bgs).

SS-17C: Surface soil sample (0.5 to 1.5 inches bgs).

SS-17D: Surface soil sample (0.5 to 1.5 inches bgs).

SS-17E: Surface soil sample (0.5 to 1.5 inches bgs).

3.5.4 Samples collected for confirmatory analysis.

After conducting the field screening analyses, confirmatory samples were collected for PCBs (BNA/Pest/PCB) from sampling locations TR-04A, TR-04E, TR-04F, TR-04FD (duplicate of TR-04F), TR-05A, TR-05B, TR-05D, and TR-09B; no confirmatory samples for nitroaromatics and nitroglycerin were collected from Area H.

3.6 AREA I - BAG LOADING AREA

3.6.1 Samples collected for offsite analysis.

The sampling area consisted of Bag Loading Building 445 and the surrounding land. The area in the vicinity of the building was vegetated with grass and various trees, and included a waste pile and blast wall (probably part of the former Igniter Magazine Building 447) to the northeast of Bag Loading Building 445.

FB-02: Field blank prepared, as previously described for sample FB-01, in a grassy area in the vicinity of sample point SS-21.

RB-02: Rinsate blank prepared as previously described for sample RB-01.

SS-20: Surface soil sample (0 to 2 inches) collected from an area on the northeast side of Bag Loading Building 445. The sampling location was approximately 15 feet northeast of the midpoint of the building concrete pad directly in front of the double wooden doors labeled "6" (Photograph A-36; Figure D-26). The soil collected consisted of both a brown, gravelly silt and a reddish-orange, clay.

SS-21: Surface soil sample (0 to 2 inches) collected from an area to the northeast of Bag Loading Building 445. The sample was collected approximately 15 feet south of the blast wall (Photographs A-34 and A-35; Figure D-27) and approximately 20 feet east of the waste pile. The soil collected consisted of a light brown, clayey silt with a little gravel.

3.6.2 Samples collected for PCB field screening.

One location in Area I was selected for PCB screening. Two utility poles are situated on an embankment to the east of Bag Loading Building 425; the embankment and a retaining wall are located on the east side of the access road which runs parallel to the eastern side of Bag Loading Building 425 (Photograph B-16; Figure D-28). The utility poles are intact and have an overhead platform connecting them. A depression is located between the poles beneath the platform with transformer parts in it. Two covers with a "W" on them were present. Ceramic debris was scattered throughout the depression. The area is labeled with a sign reading "27", and the poles are labeled TS-180 and TS-181. Surface water would drain from the depression to the north via a drainageway which goes down the slope to the shoulder of the road. A fire hydrant is located within the drainageway on the embankment.

TR-07A: Surface soil sample (0.5 to 1.5 inches bgs) collected adjacent to a cover labeled "W", approximately 3 feet north of the sign reading "27".

TR-07B: Surface soil sample (0.5 to 1.5 inches bgs) collected at the base of the sign reading "27". The soil consisted of loose brown clay.

TR-07C: Surface soil sample (0.5 to 1.5 inches bgs) collected at the base of Pole 1 on the east side.

TR-07D: Surface soil sample (0.5 to 1.5 inches bgs) collected at the base of Pole 2 on the south side.

TR-07E: Surface soil sample (0.5 to 1.5 inches bgs) collected approximately 2 feet northeast of the fire hydrant.

TR-07F: Surface soil sample (0.5 to 1.5 inches bgs) collected approximately 2 feet southwest of the fire hydrant.

3.6.3 Samples collected for TNT/RDX field screening.

No samples were collected from Area I for RDX/TNT field screening.

3.6.4 Samples collected for confirmatory analysis.

After conducting the field screening analyses, confirmatory samples were collected for PCBs (BNA/Pest/PCB) from sampling location TR-07A; no confirmatory samples for nitroaromatics and nitroglycerin were collected from Area I.

4.0 DEVIATIONS FROM THE WORK PLAN

The deviations from the work plan consisted of changes to the number of samples collected and the locations sampled (Table 3).

After preparation of the work plan, it was learned that the boxes suspected to contain files of the former Flow Laboratories operations at Bag Loading Building 464 in Area H no longer existed. The file area appeared to be heavily contaminated with asbestos containing material (ACM), therefore, the work plan included a certified asbestos worker in the field team. With the removal of the file materials, the suspected ACM in Area H did not require sampling, therefore, the certified asbestos worker was removed from the field team and the proposed samples were not collected. A few samples in other areas were not collected for the same reason.

ORIGINAL

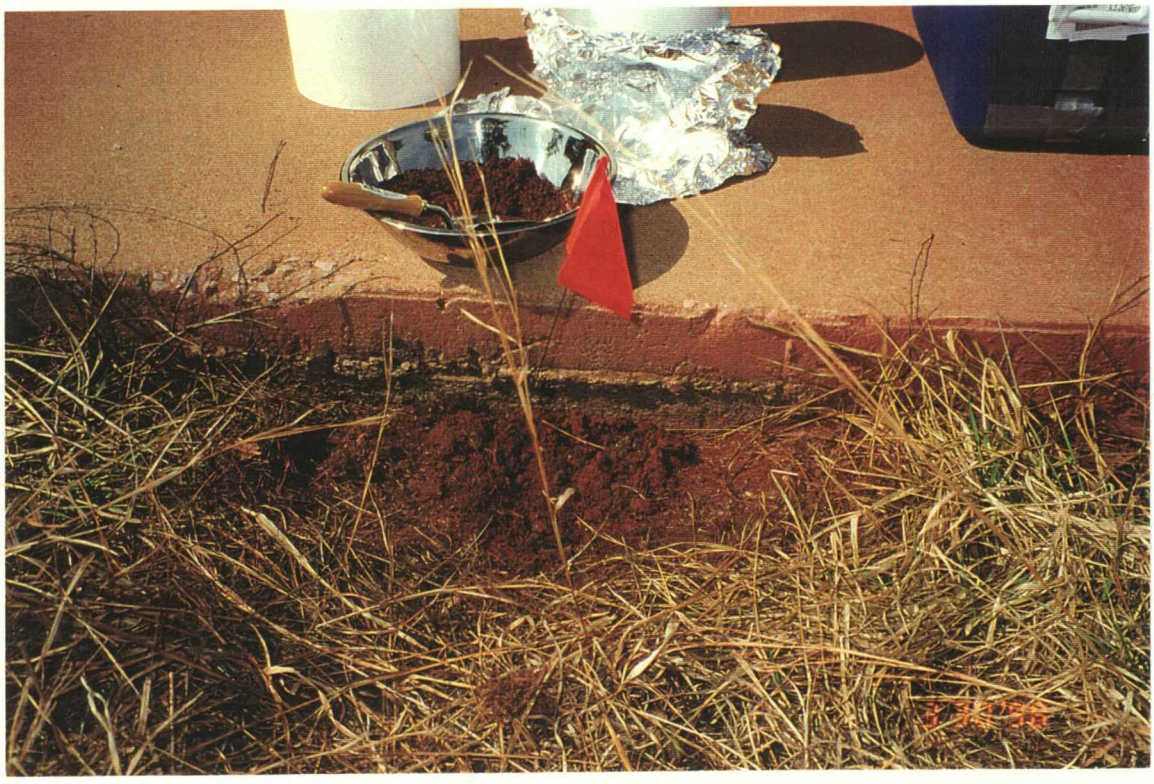
TABLE 3
DEVIATIONS FROM SAMPLING PLAN
SAMPLING MARCH 30 - APRIL 2, 1998
NEW RIVER STORAGE DEPOT, PULASKI COUNTY, VIRGINIA

Sample Number	Area	Description	Reason For Deviation
WW-03	D - Rail Yard	Transfer Platform 602-Water	Not Collected, No Water
SL-09	D - Rail Yard	Transfer Platform 603-Sludge	Not Collected, No Sludge
SW-05	G - NRSD Stream	Surface Water	Sample moved to SW-07
WW-05	H - Bag Loading Bldg 464	Sump Water	Not Collected, No Water
SS-18	H - Bag Loading Area	Shallow Soil Sample at Old Drums	On Adjacent Property, Need Recon to Locate
SS-19	H - Bag Loading Area	Shallow Soil Sample at Old Drums	On Adjacent Property, Need Recon to Locate
WS-06	H - Canteen/Boiler Bldg.	Possible Friable ACM	ACM not to be Sampled
WS-07	H - Canteen/Boiler Bldg.	Possible Friable ACM	ACM not to be Sampled
WS-08	H - Canteen/Boiler Bldg.	Possible Friable ACM	ACM not to be Sampled
WS-09	H - Bag Loading Area Bldgs.	Possible ACM on File Boxes	ACM not to be Sampled
WS-10	I - Bag Loading Bldg. 445	Possible ACM Floor Tile	ACM not to be Sampled
WS-11	I - Shipping Magazine 451	Red Conductive Paint	Shipping Magazine 451 Does Not Exist, ACM not to be Sampled
WS-12	I - Shipping Magazine 451	Possible ACM Transite Roofing	Shipping Magazine 451 Does Not Exist, ACM not to be Sampled
SS-20	I - Bag Loading Bldg 440	Shallow Surface Soil	Shipping Magazine 451 Does Not Exist, Sampling Location Moved
SS-21	I - Bag Loading Bldg 440	Shallow Surface Soil	Shipping Magazine 451 Does Not Exist, Sampling Location Moved

APPENDIX A

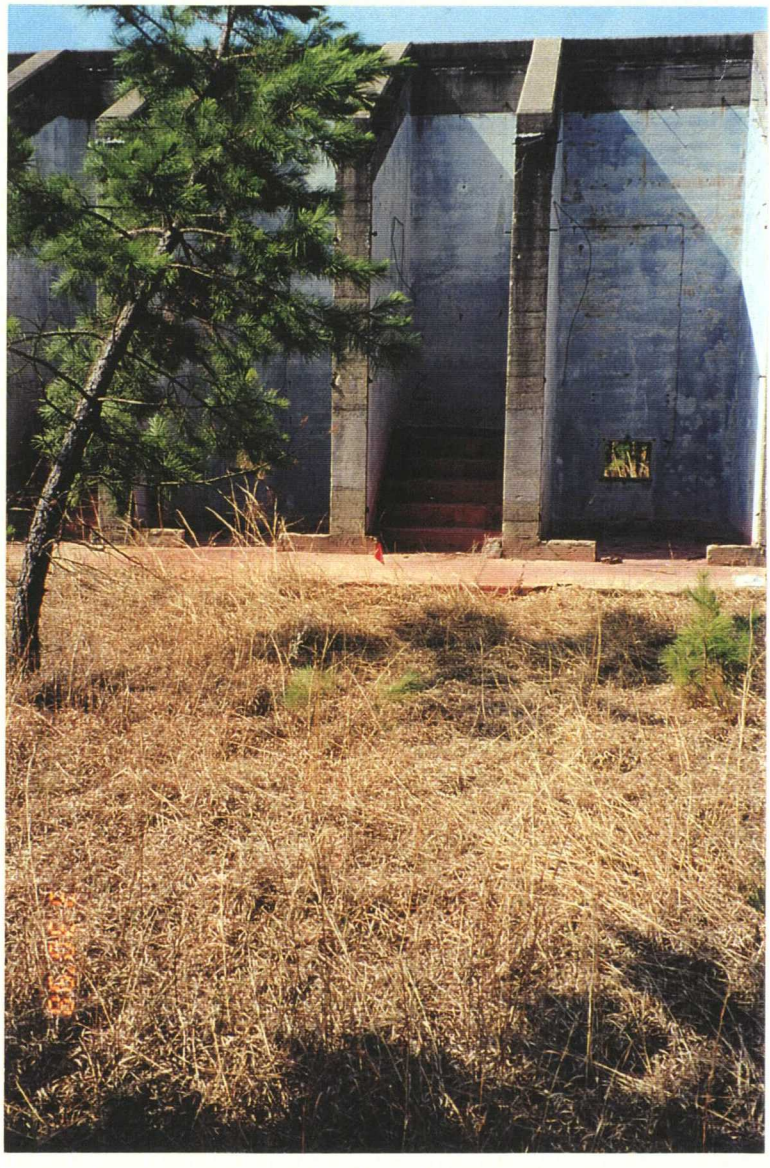
PHOTOGRAPH LOG - SAMPLES FOR OFFSITE LABORATORY ANALYSIS

ORIGINAL



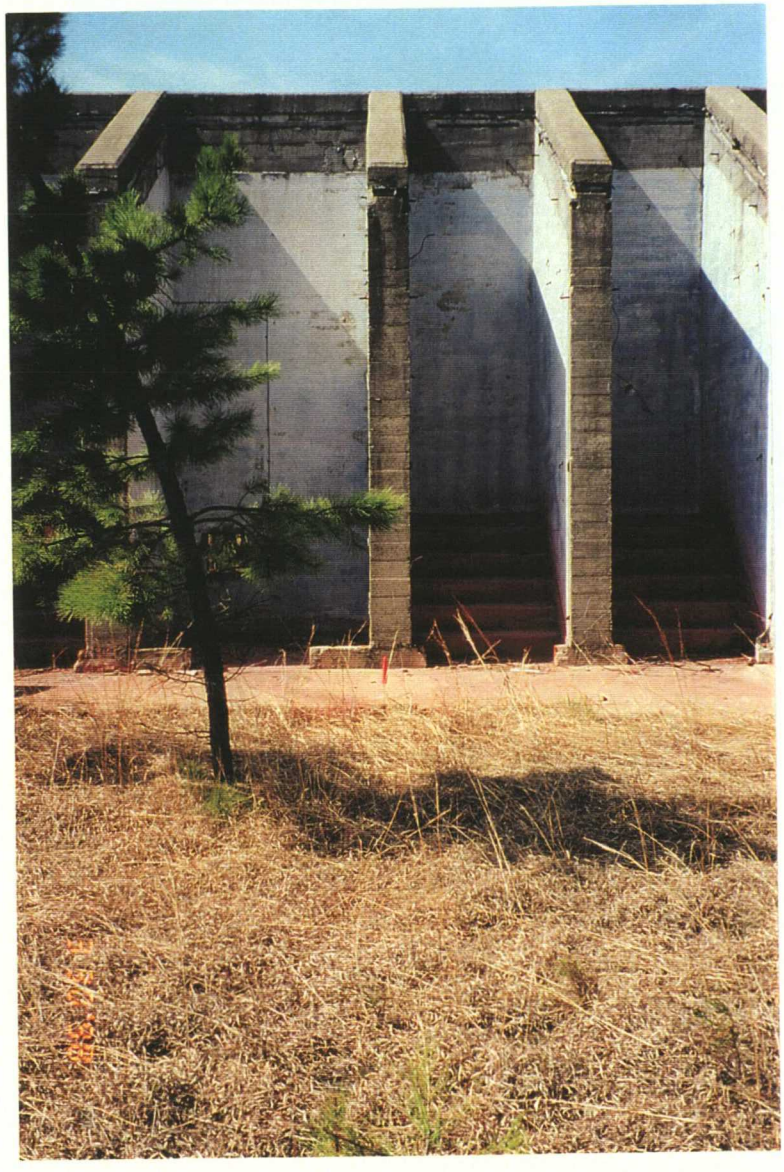
NRSD Photograph 1: Area B - Igniter Area
View of Sample SS-11a Sampling Location (TechLaw [TL] Photo 1-1)

ORIGINAL



NRSD Photograph 2: Area B - Igniter Area
View of Sample SS-11a Sampling Location Relative to Igniter Bldg 8102-5 (TL 1-2)

NRSD Photograph 3: Area B - Igniter Area
View of Sample SS-11b Sampling Location (TL 1-3)



NRSD Photograph 4: Area B - Igniter Area
View of Sample SS-11b Sampling Location Relative to Igniter Bldg 8102-5 (TL 1-4)

NRSD Photograph 5: Area B - Igniter Area
View of Sample SS-12 Sampling Location (TL 1-5)

NRSD Photograph 6: Area B - Igniter Area
View of Sample SS-12 Sampling Location Relative to Igniter Bldg 8102-6 (TL 1-6)

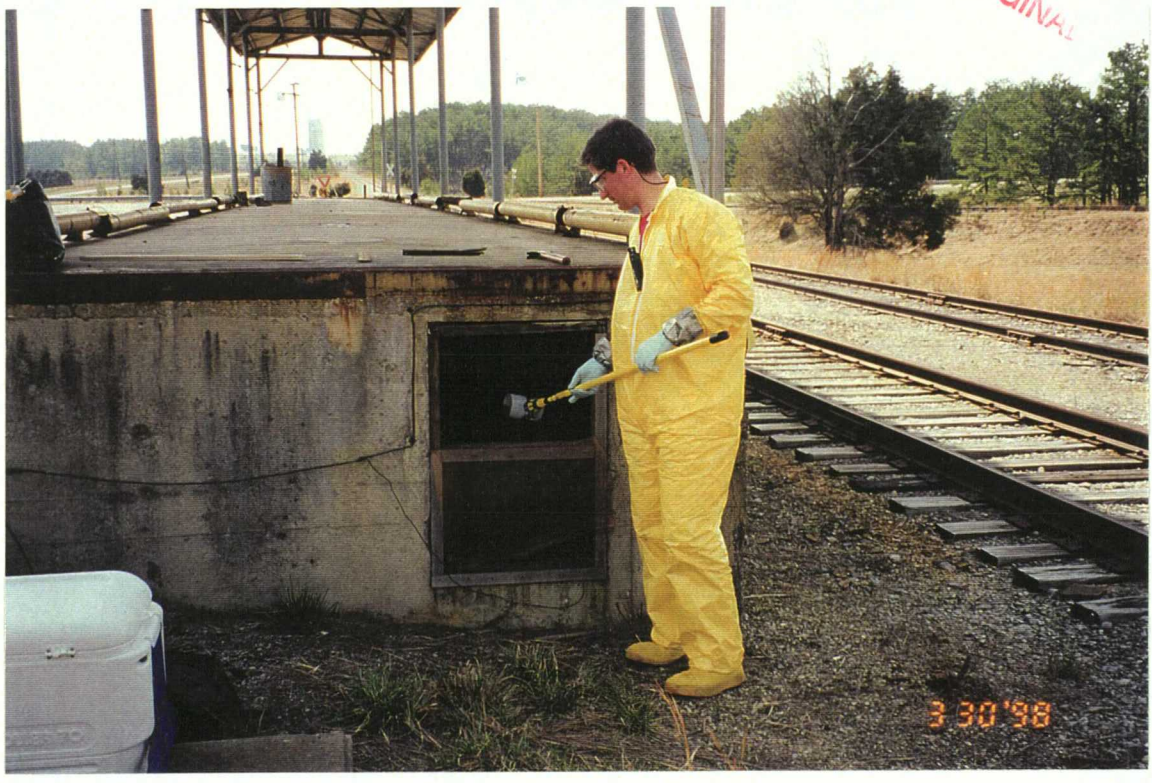
NRSD Photograph 7: Area B - Igniter Area
View of Sample SS-12c Location with Igniter Bldg 8102-6 in Background (TL 1-19)

NRSD Photograph 8: Area D - Rail Yard
View of Transfer Platform 603 (TL 1-7)

NRSD Photograph 9: Area D - Rail Yard
View of Sample SS-08a Sampling Location (TL 1-8)

NRSD Photograph 10: Area D - Rail Yard
View of Sample SS-08a Location Relative to Transfer Platform 603 (TL-1-9)

ORIGINAL

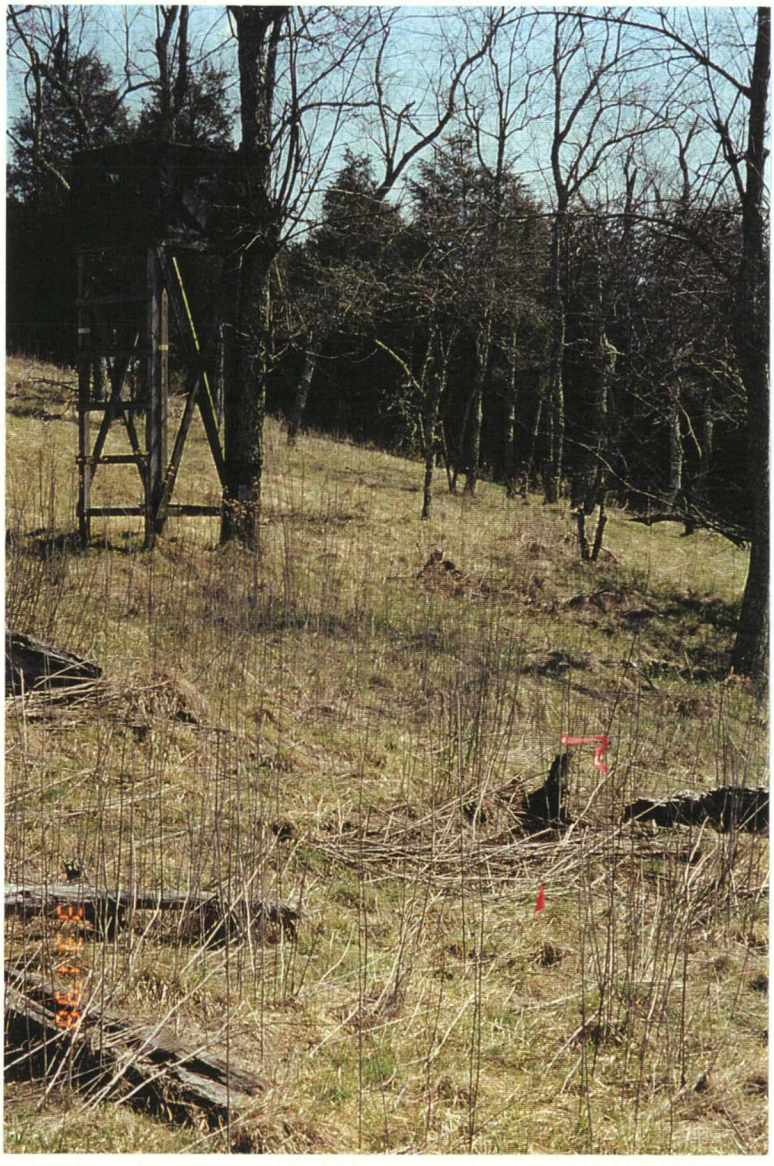


NRSD Photograph 11: Area D - Rail Yard
View of Samples SL-08/SL-108 Sampling Location (Under Platform) (TL 1-10)

NRSD Photograph 12: Area E - Bag Loading Area
View of Sample SS-14 Location (TL 1-20)

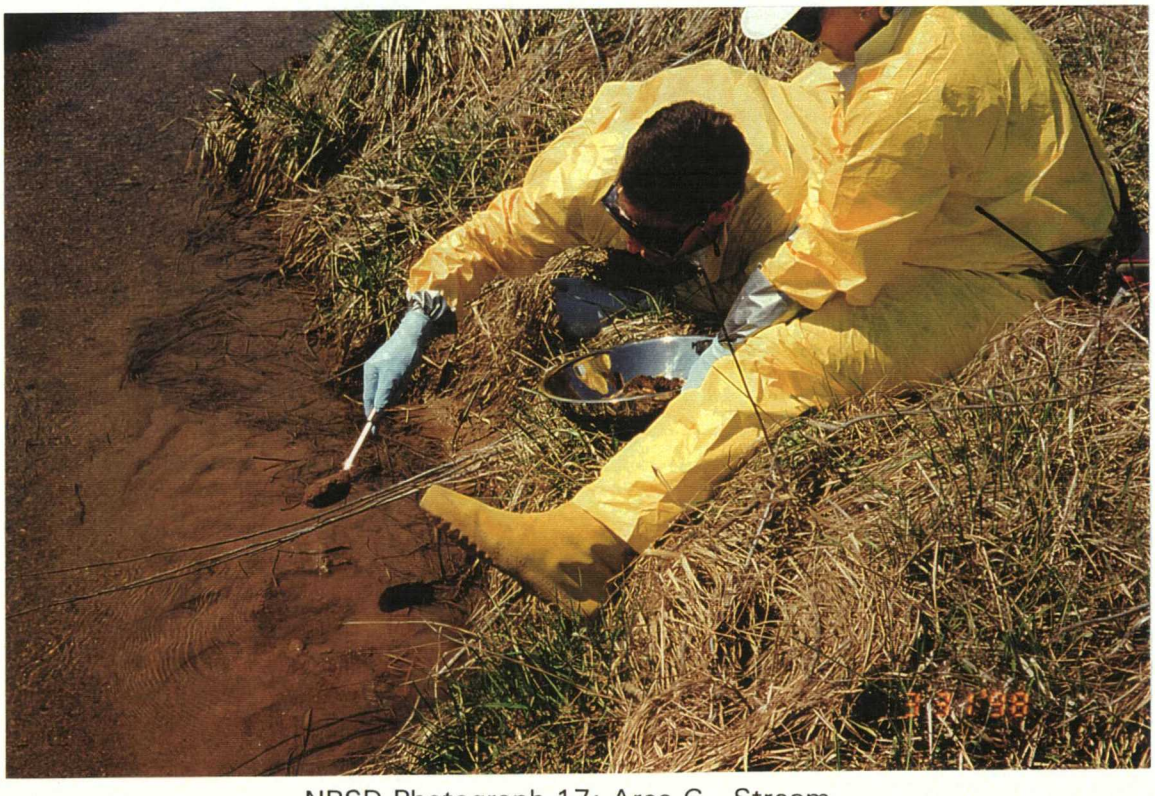
NRSD Photograph 13: Area E - Bag Loading Area
View of Sample SS-14 Location Relative to Building 405 (TL 1-21)

NRSD Photograph 14: Area G - Stream
View of Sample SD-08 Sample Location (TL 1-22)



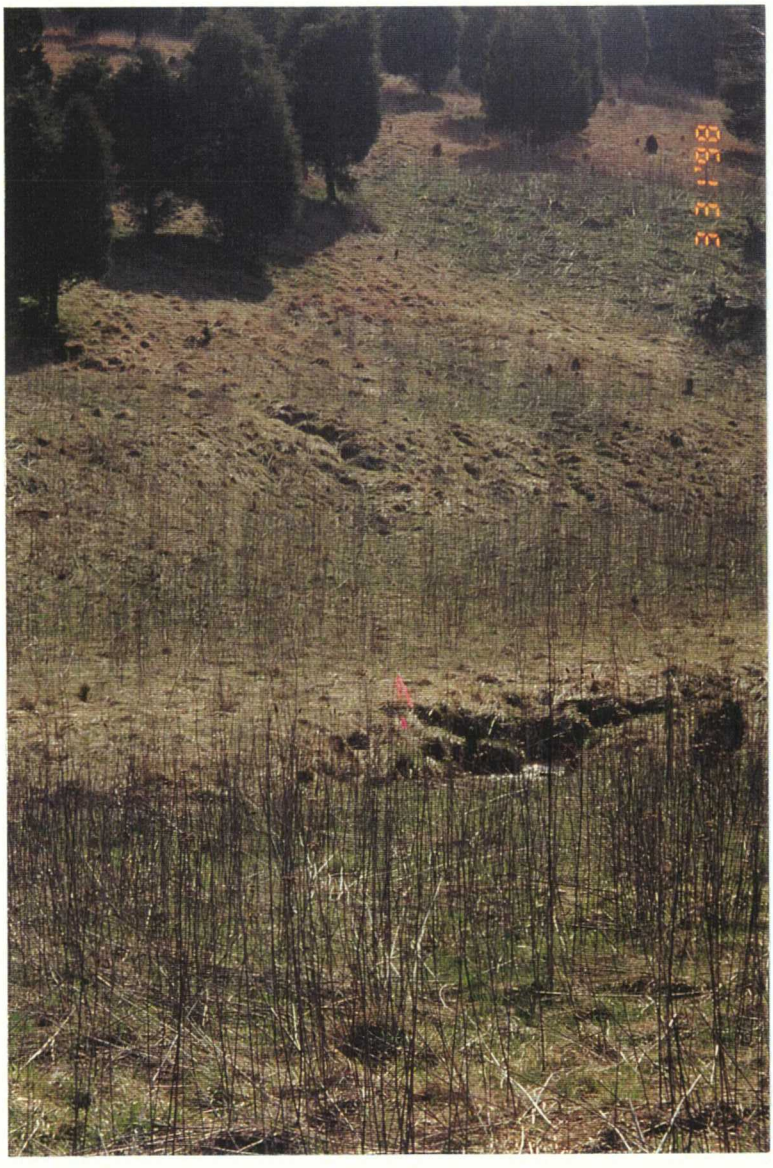
NRSD Photograph 15: Area G - Stream
View of Sample SD-08 Location Relative to Deer Stand (TL 1-23)

NRSD Photograph 16: Area G - Stream
View of Sample SW-07 Sample Collection (TL 1-24)



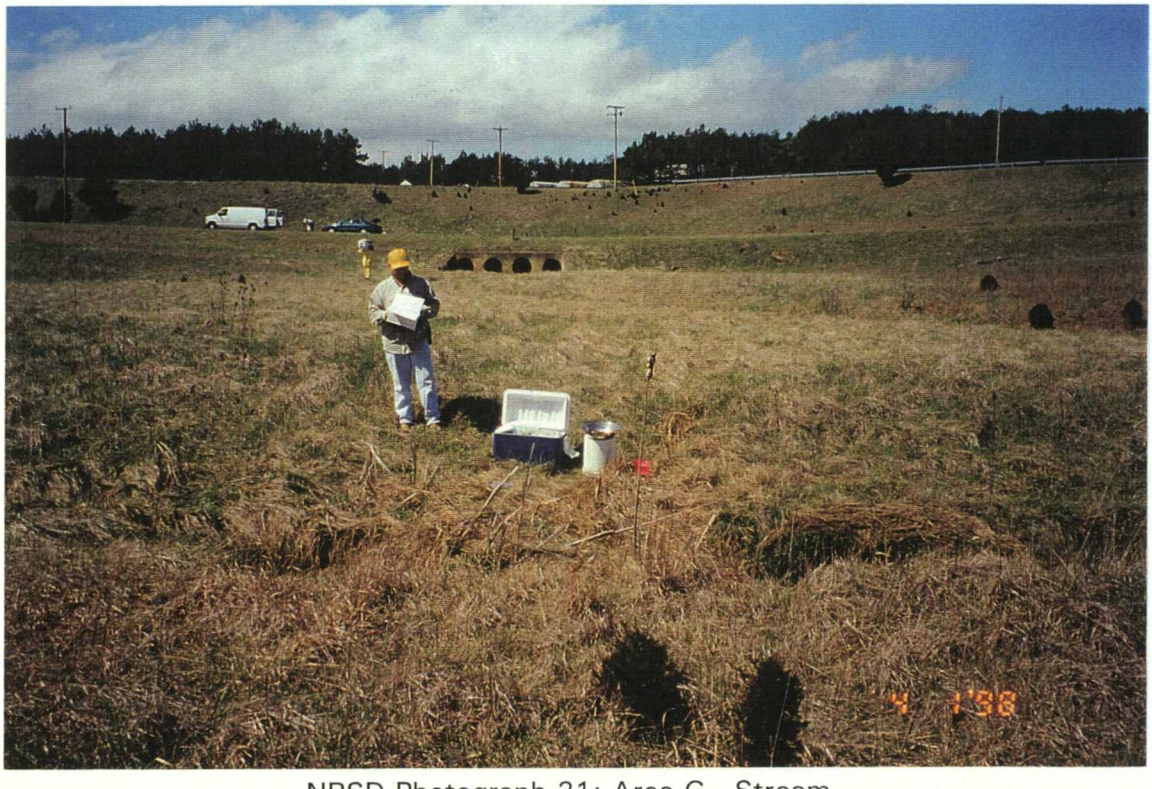
NRSD Photograph 17: Area G - Stream
View of SD-07 Sample Collection (TL 1-25)

NRSD Photograph 18: Area G - Stream
View of SD-06 Sample Collection (TL 1-26)



NRSD Photograph 19: Area G - Stream
View of Sample SD-06 Location Relative to Tree Line (TL 1-27)

NRSD Photograph 20: Area G - Stream
View of SD-04 Sampling Location (TL 1-28)



NRSD Photograph 21: Area G - Stream
View of SD-04 Location Relative to Culvert and Eustis Road (TL 1-29)

NRSD Photograph 22: Area G - Stream
View of SD-03 Sample Collection (TL 1-30)

NRSD Photograph 23: Area G - Stream
View of SD-03 Location Relative to Culvert an Eustis Road (TL 1-31)

NRSD Photograph 24: Area G - Stream
View of Sample SD-05 Location (TL 1-32)

NRSD Photograph 25: Area G - Stream
View of SD-05 Location Relative to Two Barrel Culvert and Alger Road (TL 1-33)

NRSD Photograph 26: Area H - Bag Loading Area
View of Field Blank FB-01 Location (TL 1-11)

NRSD Photograph 27: Area H - Bag Loading Area
View of Rinsate Blank RB-01 Collection (TL 1-12)

ORIGINAL

NRSD Photograph 28: Area H - Bag Loading Area
View of WW-06 location (Sump) (TL 1-13)

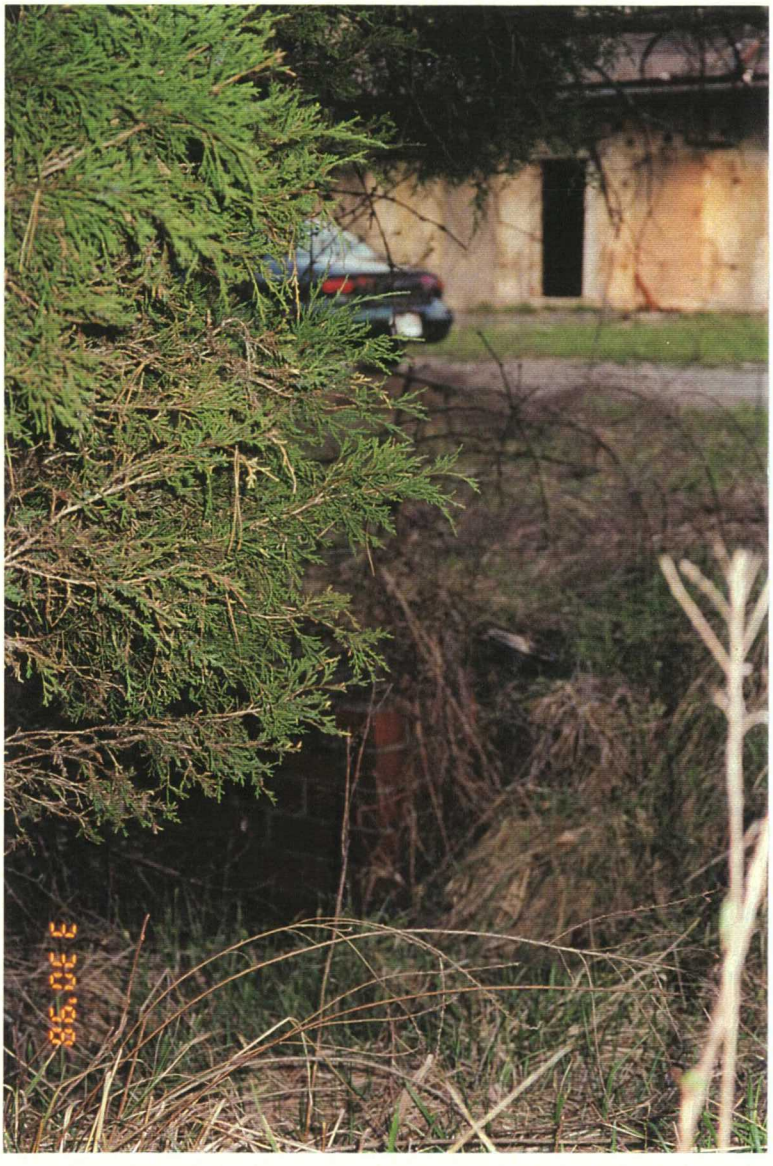
NRSD Photograph 29: Area H - Bag Loading Area
View of WW-06 Location Relative to Bldg A-464 (TL 1-14)

ORIGINAL

NRSD Photograph 30: Area H - Bag Loading Area
View of SL-11 Sludge (TL 1-15)

NRSD Photograph 31: Area H - Bag Loading Area
View of SL-10 Sample Location (TL 1-16)

ORIGINAL

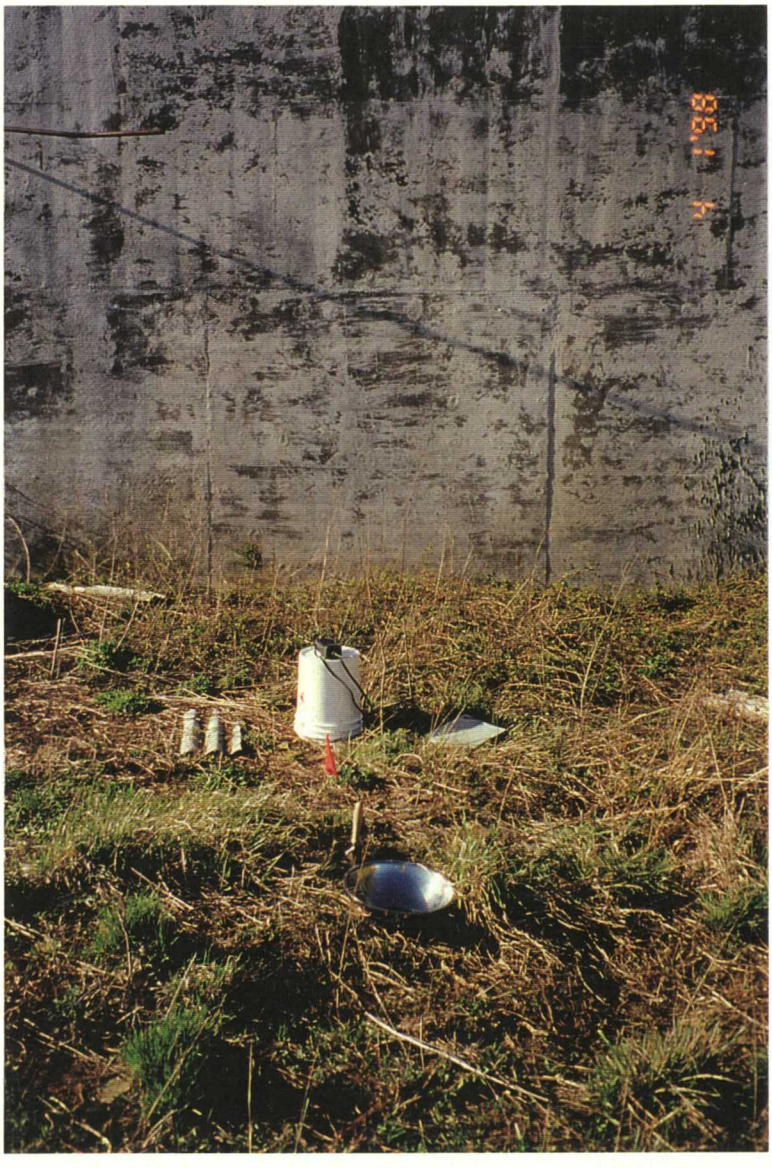


NRSD Photograph 32: Area H - Bag Loading Area
View of SL-10 Location Relative to Bldg A-464 (TL 1-17)

ORIGINAL

NRSD Photograph 33: Area H - Bag Loading Area
View of SL-10 Sample Location (TL 1-18)

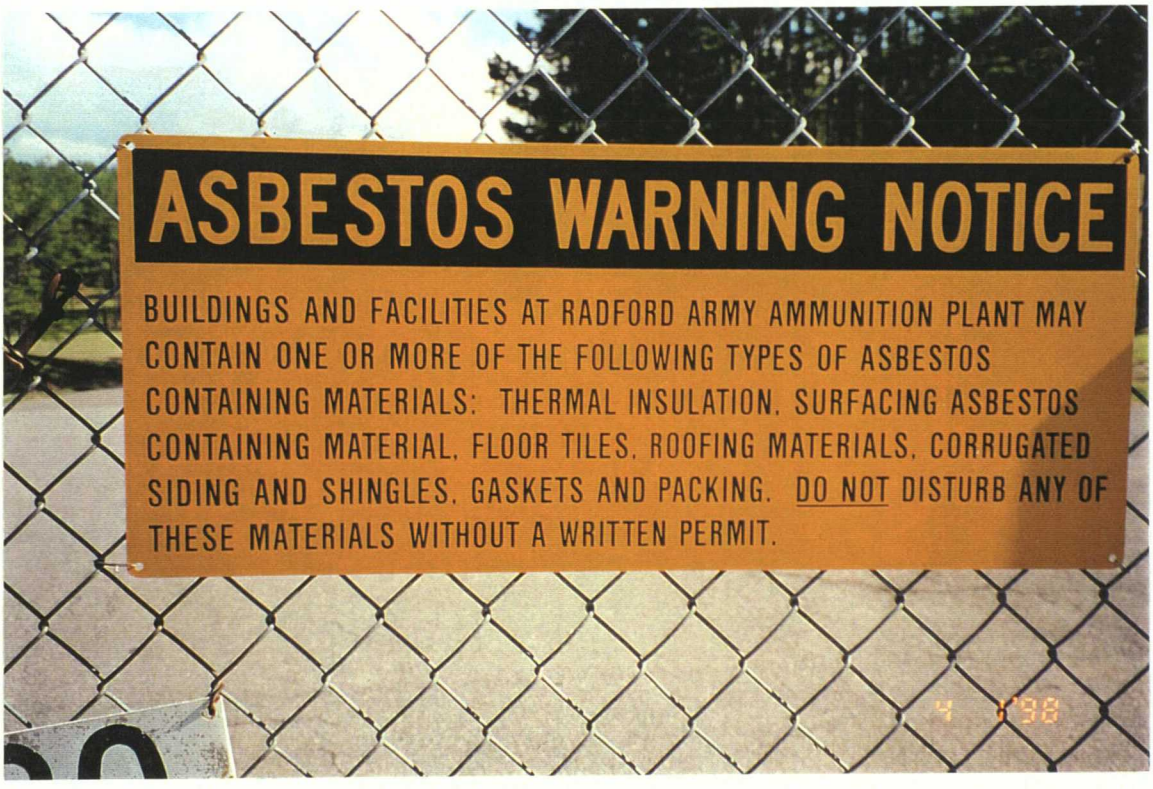
ORIGINAL



NRSD Photograph 34: Area I - Bag Loading Area
View of SS-21 Location Relative To Blast Wall (TL 1-35)

NRSD Photograph 35: Area I - Bag Loading Area
View of SS-21 Location Relative to Waste Pile and Bldg A-445 (TL 1-36)

NRSD Photograph 36: Area I - Bag Loading Area
View of SS-20 Location Relative to Bldg A-445 (TL 1-37)



NRSD Photograph 37: Guard House/Gate to NRSD
View of Asbestos Warning Notice on Gate to NRSD

APPENDIX B

PHOTOGRAPH LOG - FIELD SCREENING SAMPLES

NRSD PHOTO 1 - (Test Kit Screening Site): Igniter area looking at RDX/TNT site SS-12. Photo taken at location of PCB screening samples TR-01 A-D.

NRSD PHOTO 2 (Test Kit Screening Site): Igniter area, probable base of transformer pole for PCB screening samples TR-01 A-D.

NRSD PHOTO 5 (Test Kit Screening Site): Rail yard, north side of transfer platform 603, site of RDX/TNT screening samples SS-08 A, AA, AB and AC.

NRSD PHOTO 6 (Test Kit Screening Site): Bag Loading Area E, location of PCB screening samples at screening samples TR-03 A-F.

ORIGINAL

NRSD PHOTO 7 (Test Kit Screening Site): Bag Loading Area E (photo from November 12, 1997 field trip) location of RDX/TNT screening samples SS-13 A-C.

NRSD PHOTO 8 (Test Kit Screening Site): Bag Loading Area E. Stressed soil area. Sample taken next to gravel driveway (former access road to fire hydrant). RDX/TNT screening sample SS-14.

NRSD PHOTO 9 (Test Kit Screening Site): Bag Loading Area E. Sample collection at RDX/TNT screening sample SS-14.

NRSD PHOTO 10 (Test Kit Screening Site): Bag Loading Area E (photo from March 22, 1997 field trip) location of RDX/TNT screening samples 15 A-D.

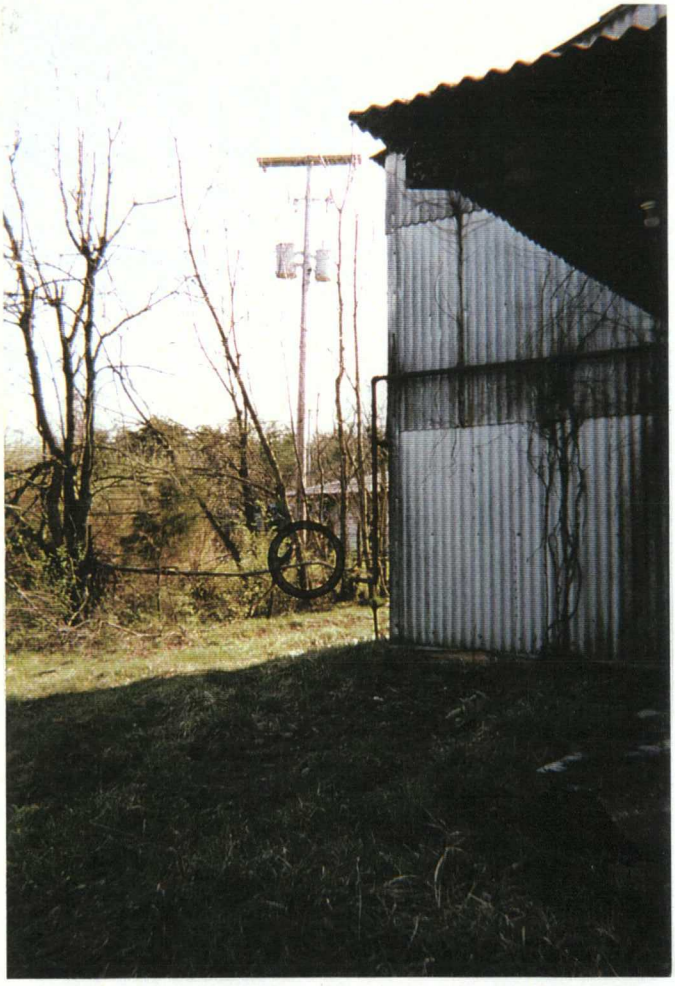
NRSD PHOTO 11 (Test Kit Screening Site): Bag Loading Area H. Former transformer pole located in dense underbrush. PCB sample location for screening samples TR-04 A-F.

NRSD PHOTO 12 (Test Kit Screening Site): Bag Loading Area H location of transformer poles, crossbars, and debris. PCB screening samples TR-05 A-H.

NRSD PHOTO 13 (Test Kit Screening Site): Bag Loading Area H. Igniter Service Magazine 467. RDX/TNT screening samples 16 A-ED.

NRSD PHOTO 14 (Test Kit Screening Site): Bag Loading Area H. Igniter Service Magazine 466. RDX/TNT screening sample SS-17.

ORIGINAL



NRSD PHOTO 15 (Test Kit Screening Site): Bag Loading Area H. New sample site designated in field. Transformer screening samples TR-09 A-B-C.

NRSD PHOTO 16 (Test Kit Screening Site): Bag Loading Area I (photo from November 12, 1997 field trip) location of PCB screening samples TR 07 A-F.

APPENDIX C

SITE AND AREA LOCATION MAPS

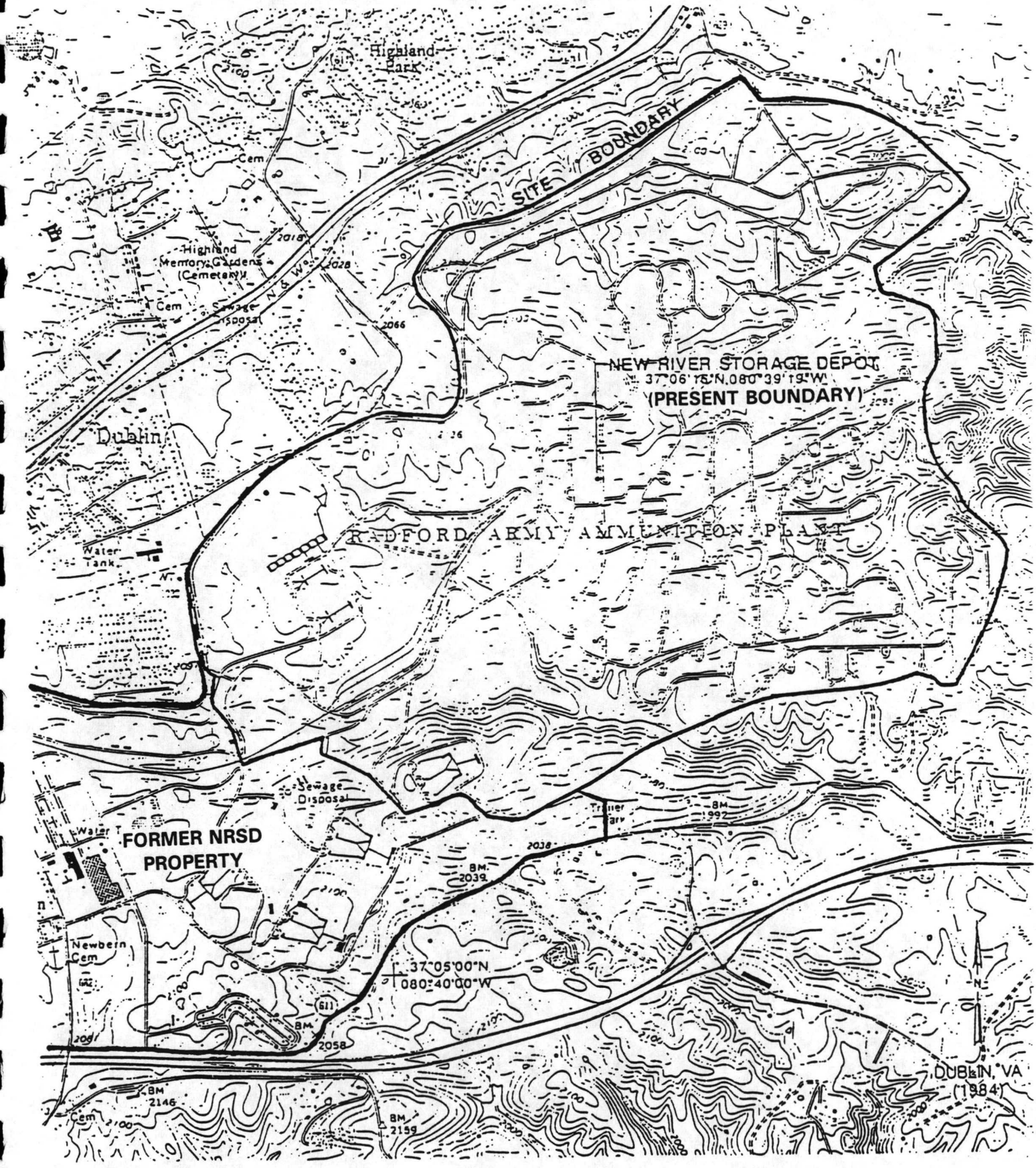


Figure 1 - Site Location Map: New River Storage Depot

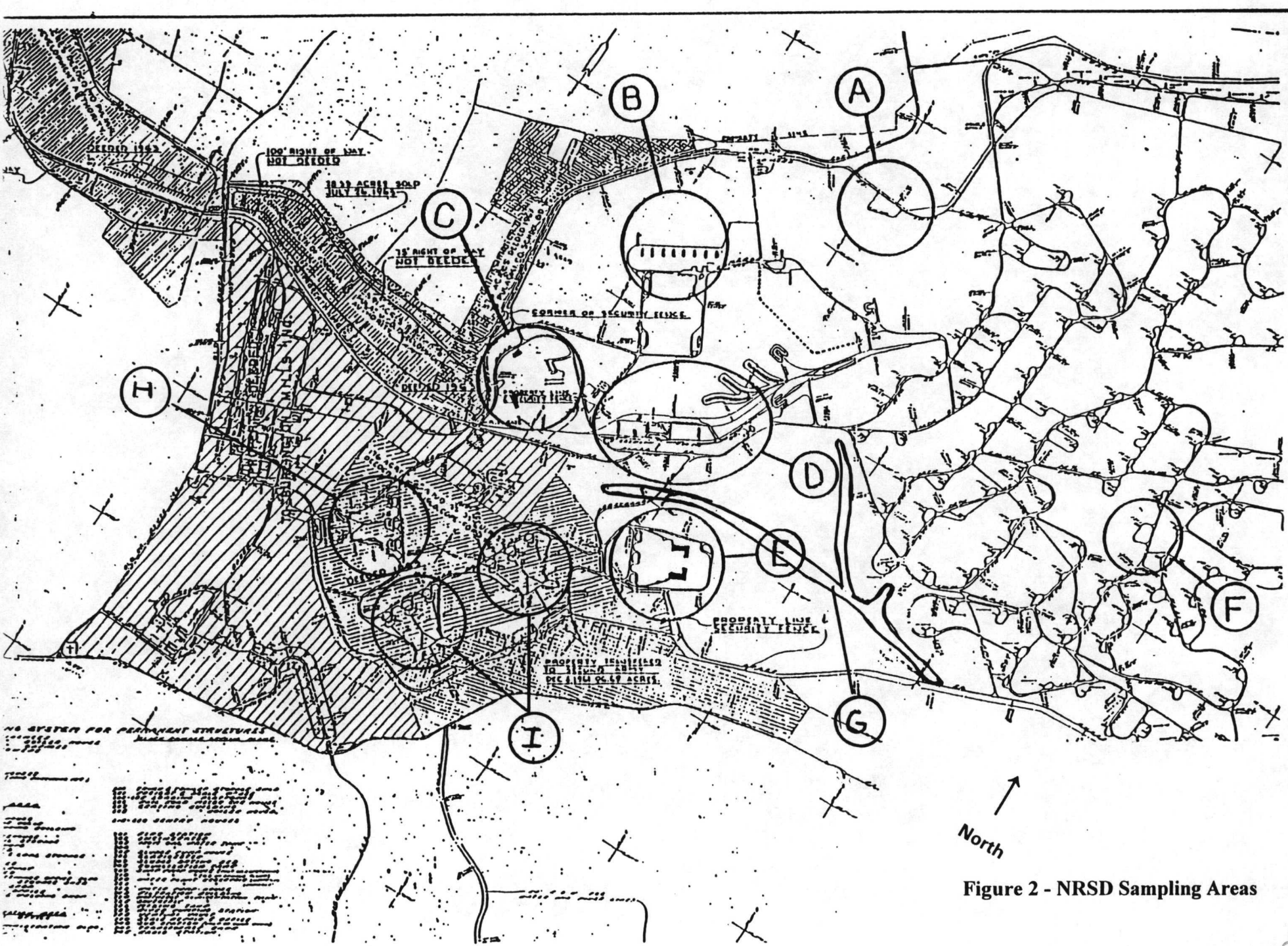


Figure 2 - NRSD Sampling Areas

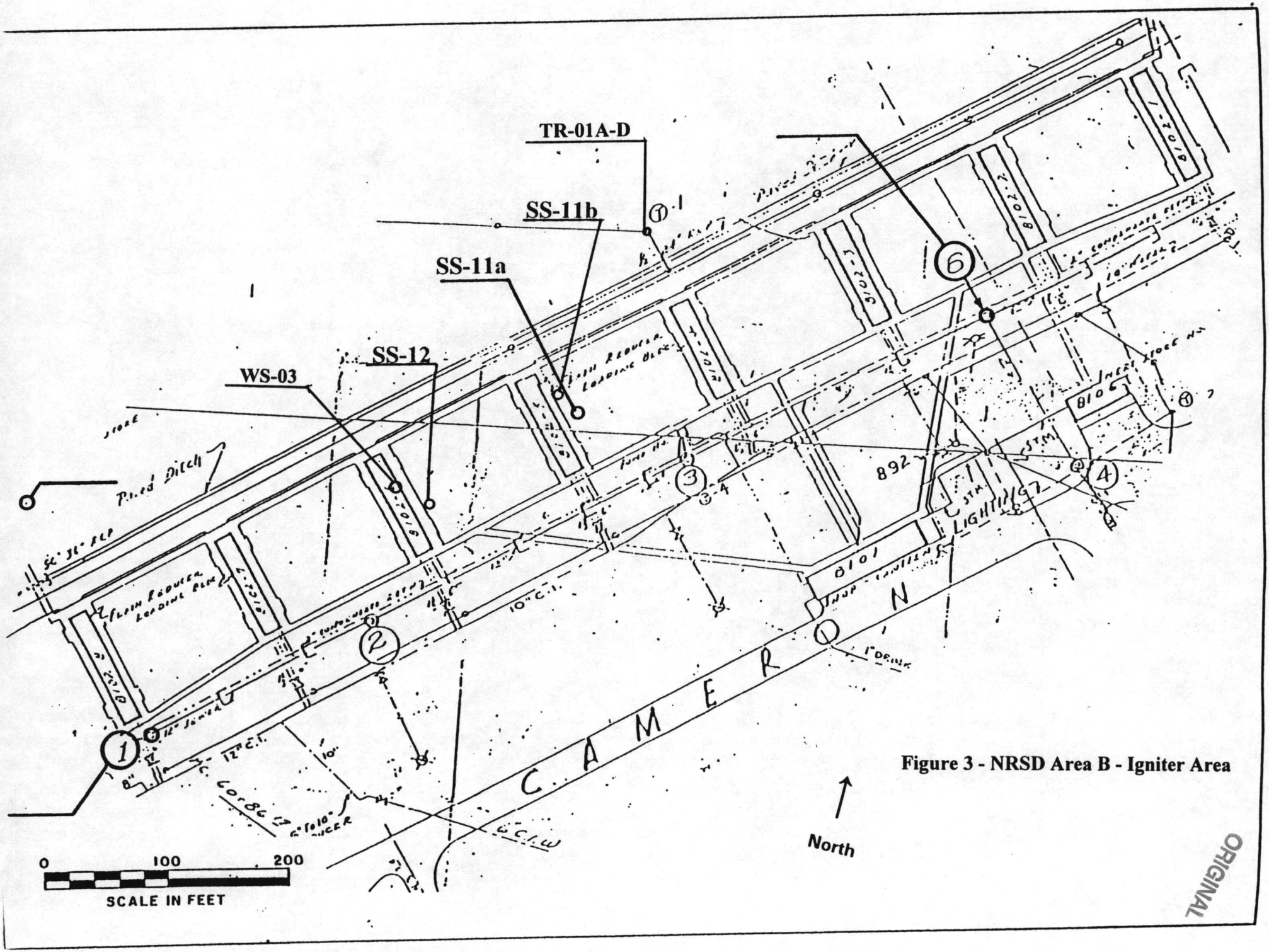


Figure 3 - NRSD Area B - Igniter Area

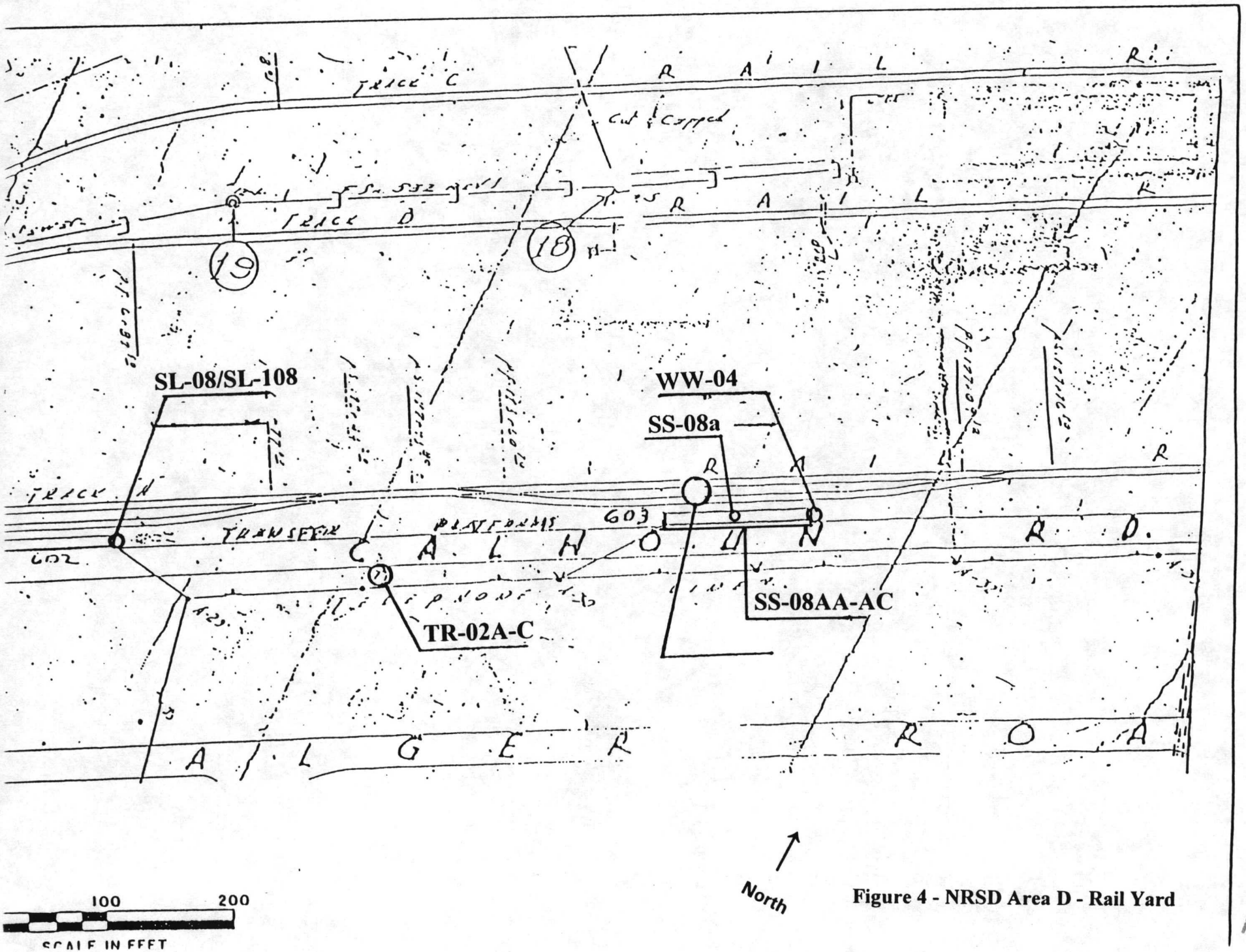


Figure 4 - NRSD Area D - Rail Yard

ORIGINAL

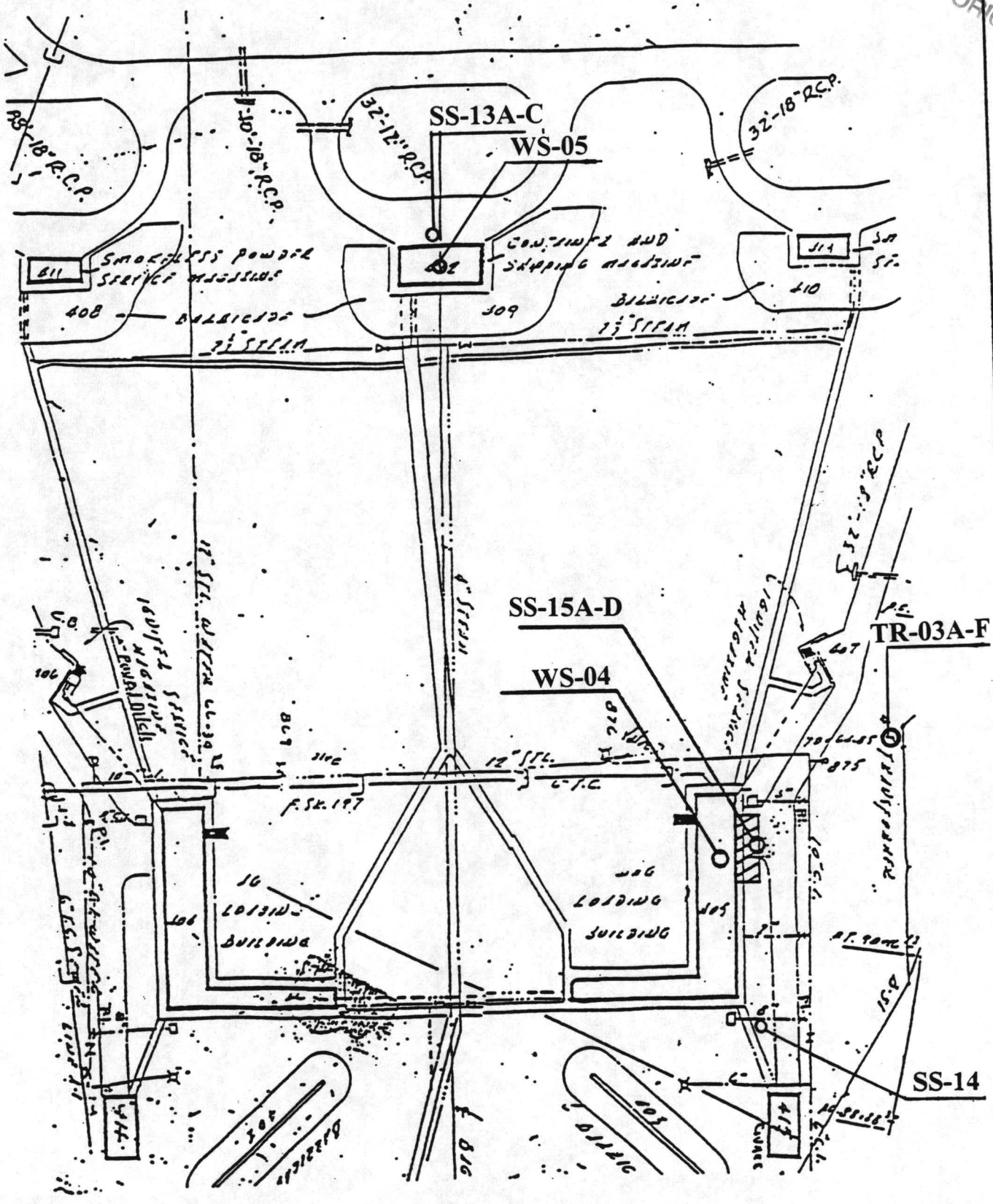


Figure 5 - NRSD Area E - Bag Loading Area

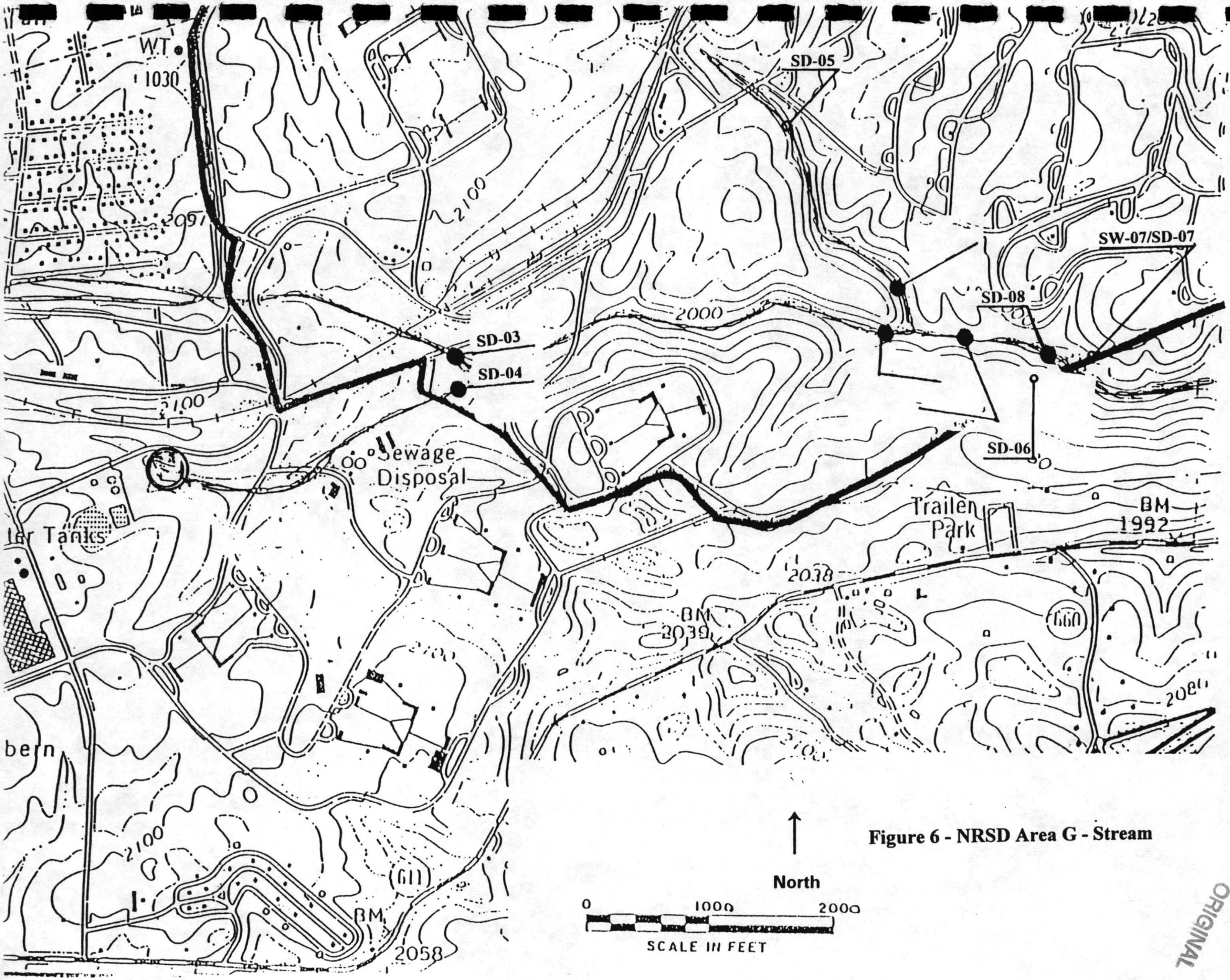


Figure 6 - NRSD Area G - Stream

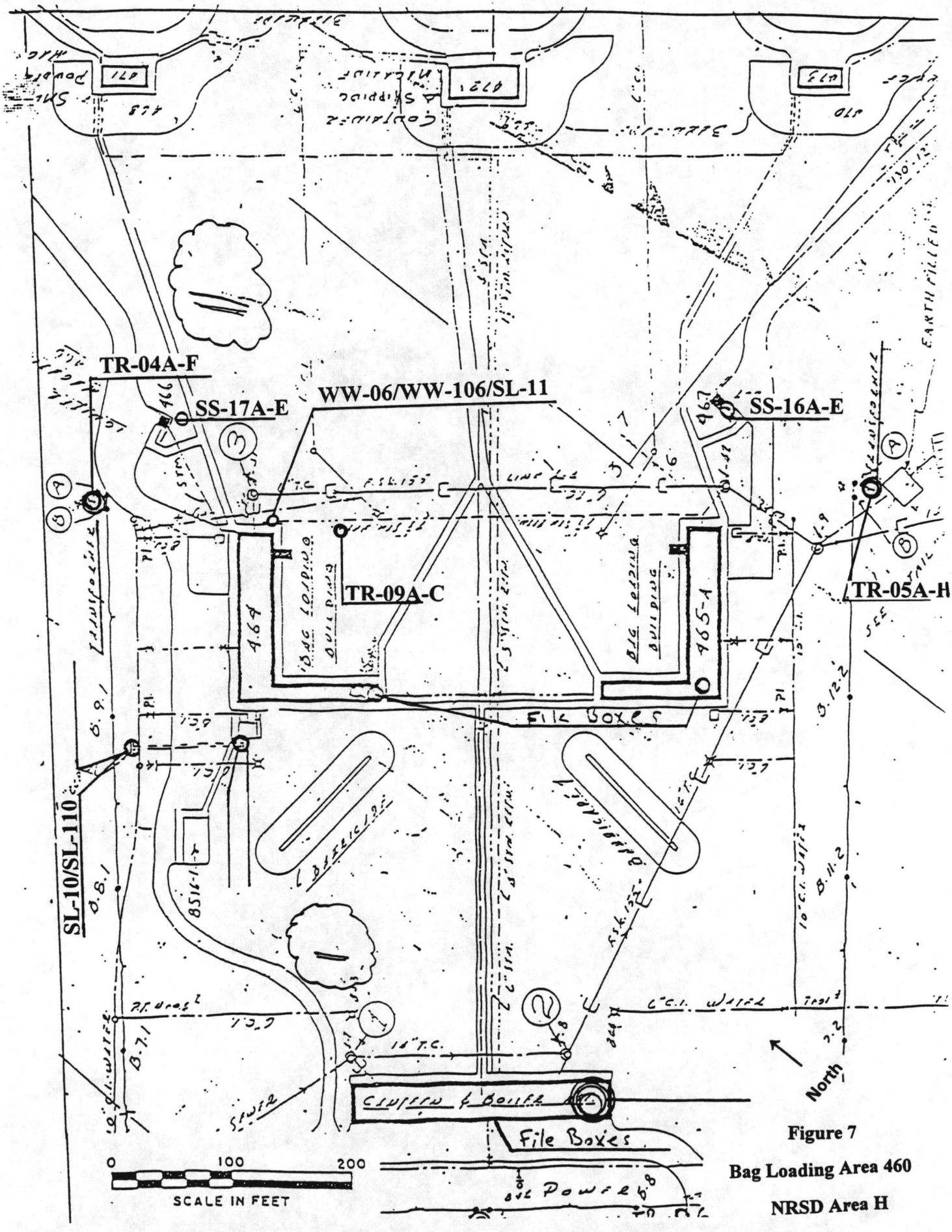


Figure 7

Bag Loading Area 460

NRSD Area H

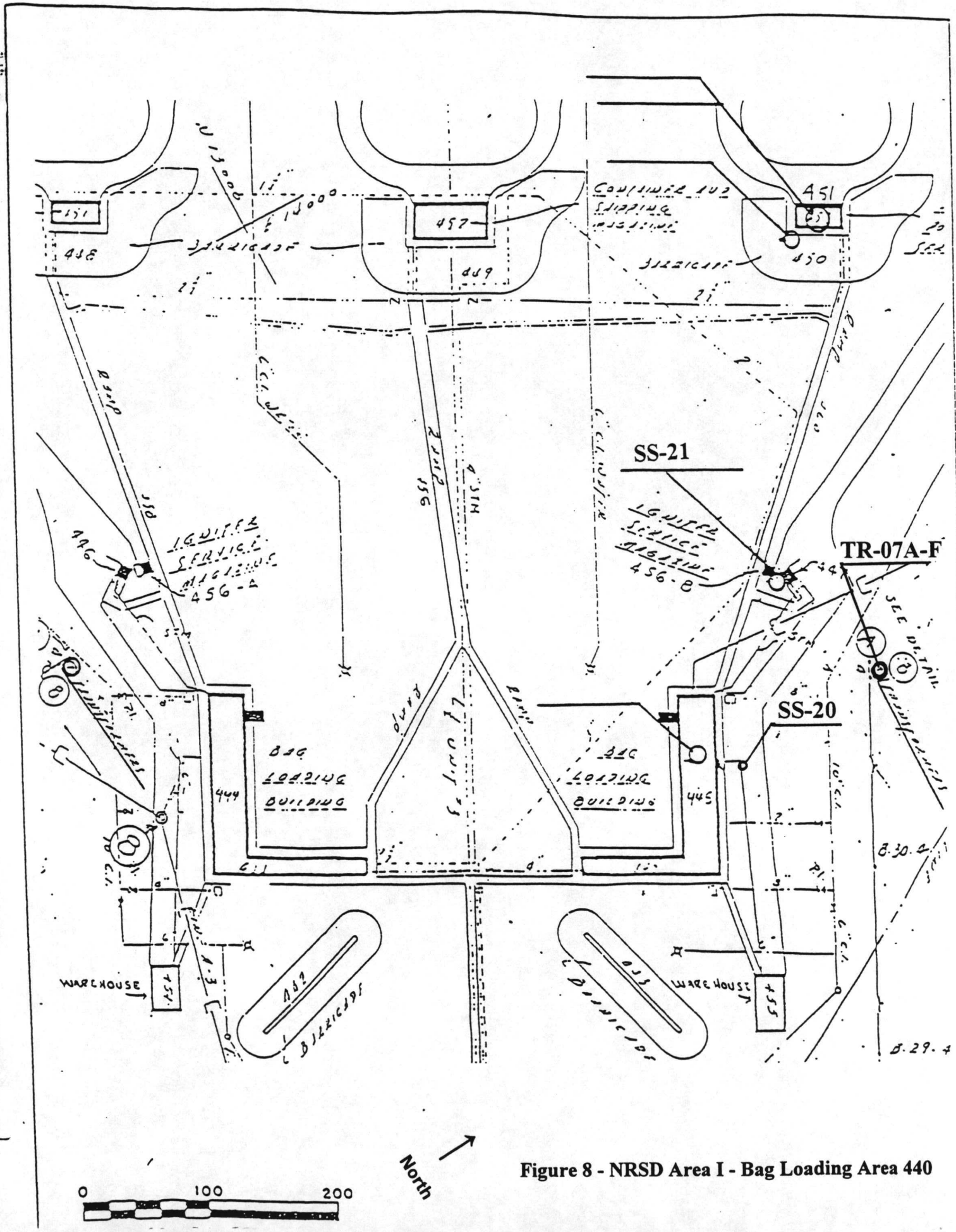


Figure 8 - NRSD Area I - Bag Loading Area 440

APPENDIX D

SAMPLING LOCATION SKETCHES

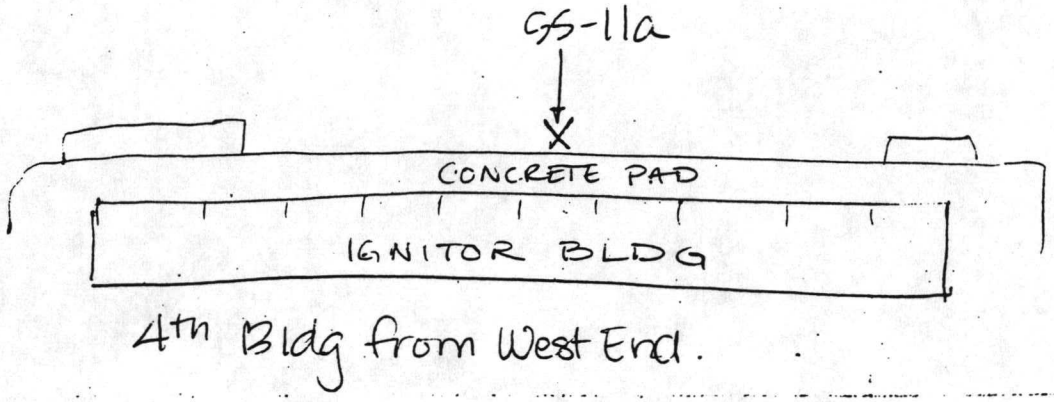


Figure D-1

Locations SS-11a

March 30, 1998

Area B - Igniter Area

(Not to scale)

Gannett Fleming

N

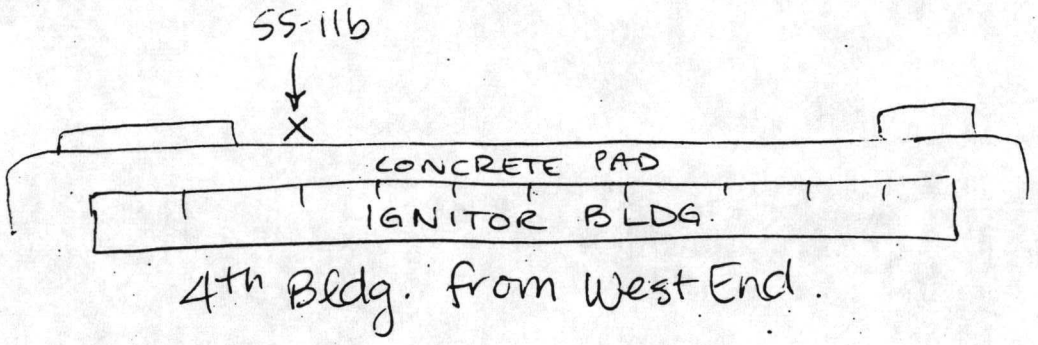


Figure D-2

Locations SS-11b

March 30, 1998

Area B - Igniter Area

(Not to scale)

Gannett Fleming

ORIGINAL

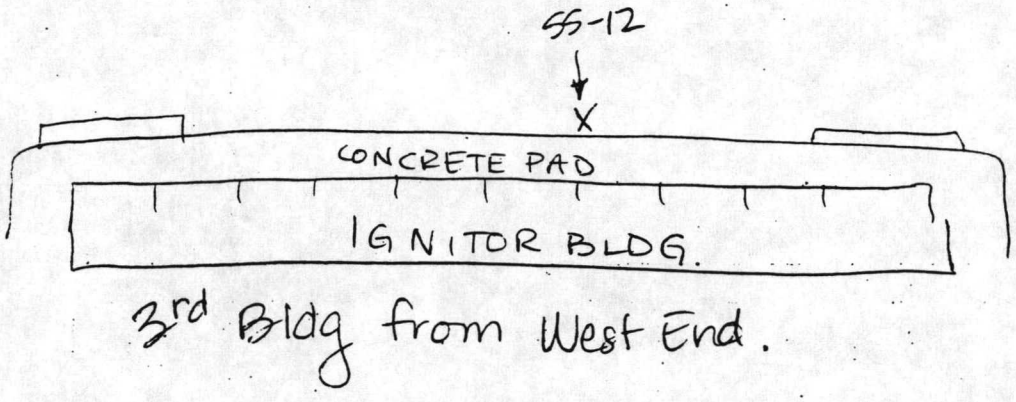


Figure D-3

Locations SS-12

March 30, 1998

Area B - Igniter Area

(Not to scale)

Gannett Fleming

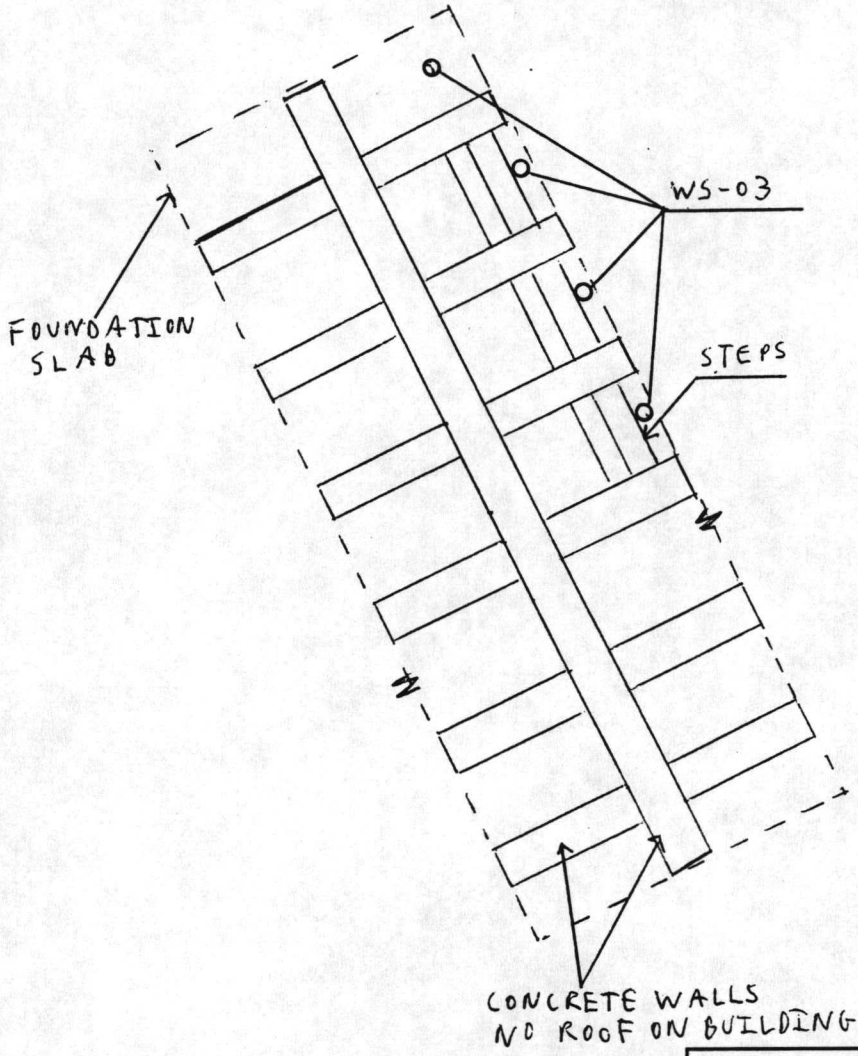


Figure D-4

Location WS-03

March 31, 1998

Area B - Igniter Area

Offsite analysis and
TNT/RDX Screening Samples

(Not to scale)

Gannett Fleming

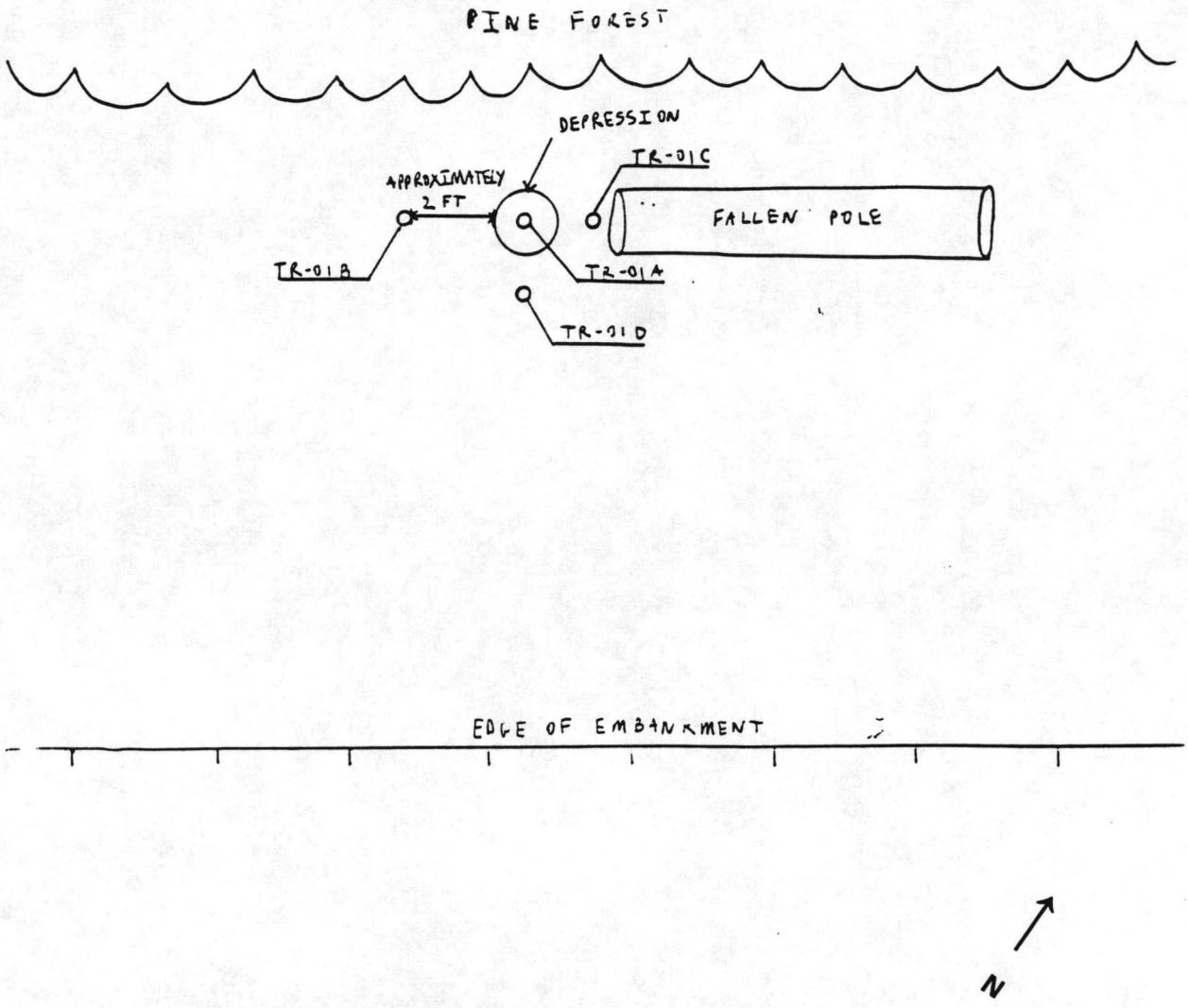


Figure D-5

Locations TR-01A through D

March 30, 1998

Area B - Igniter Area

PCB Screening Samples

(Not to scale)

Gannett Fleming

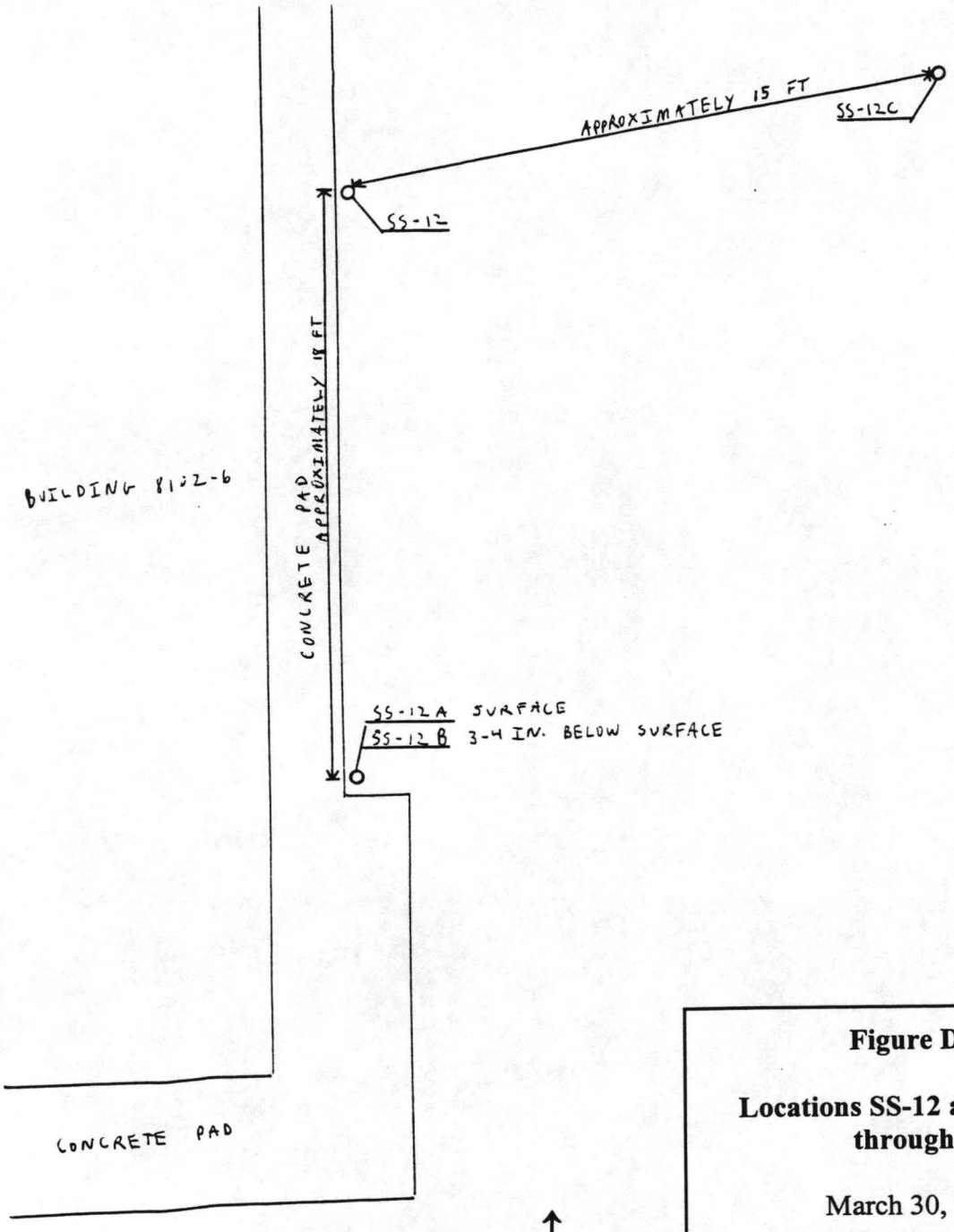


Figure D-6

Locations SS-12 and SS-12A through C

March 30, 1998

Area B - Igniter Area

TNT/RDX Screening Samples

(Not to scale)

Gannett Fleming

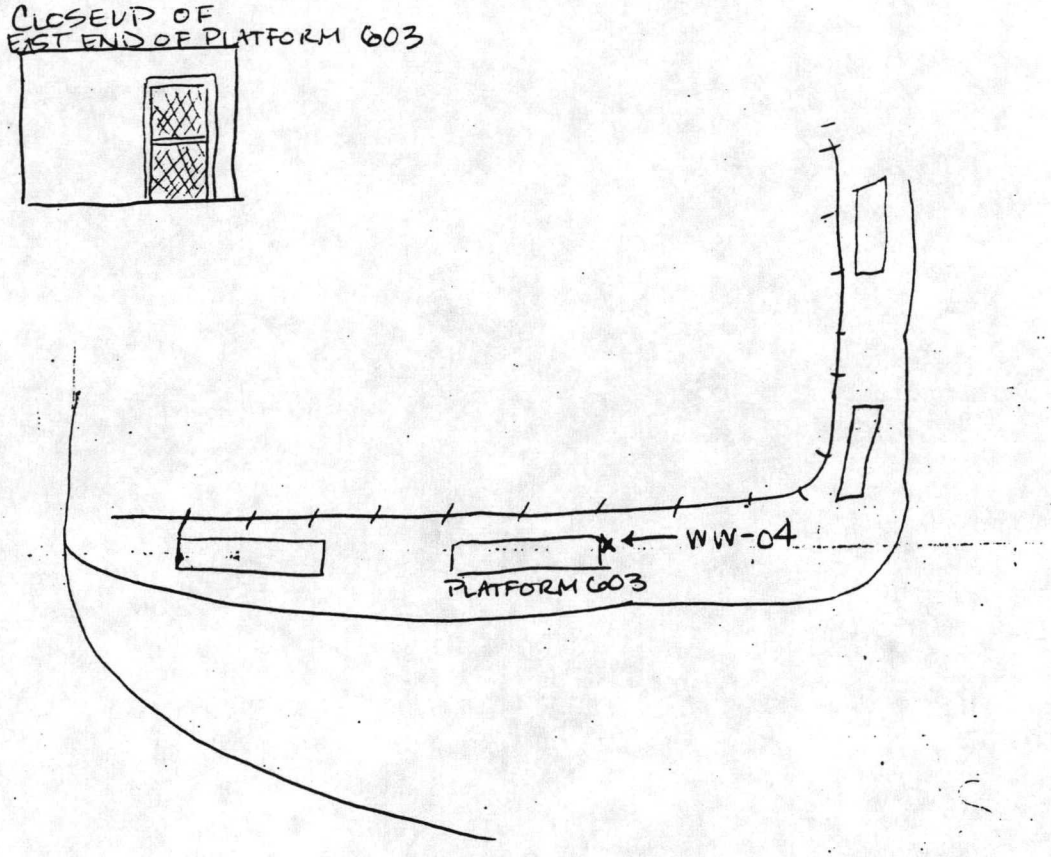


Figure D-7

Locations WW-04

March 30, 1998

Area D - Rail Yard

(Not to scale)

Gannett Fleming

See drawing for WW-04 for platform location.

Crossection N-comes out of page

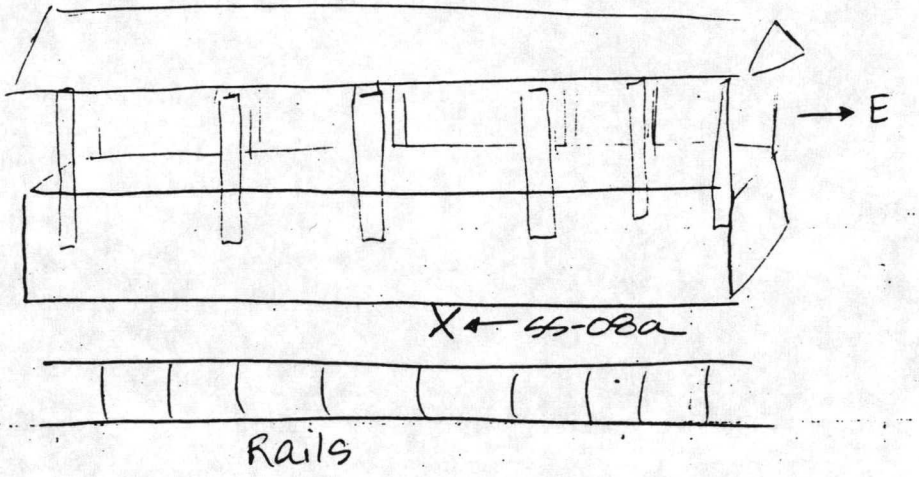


Figure D-8

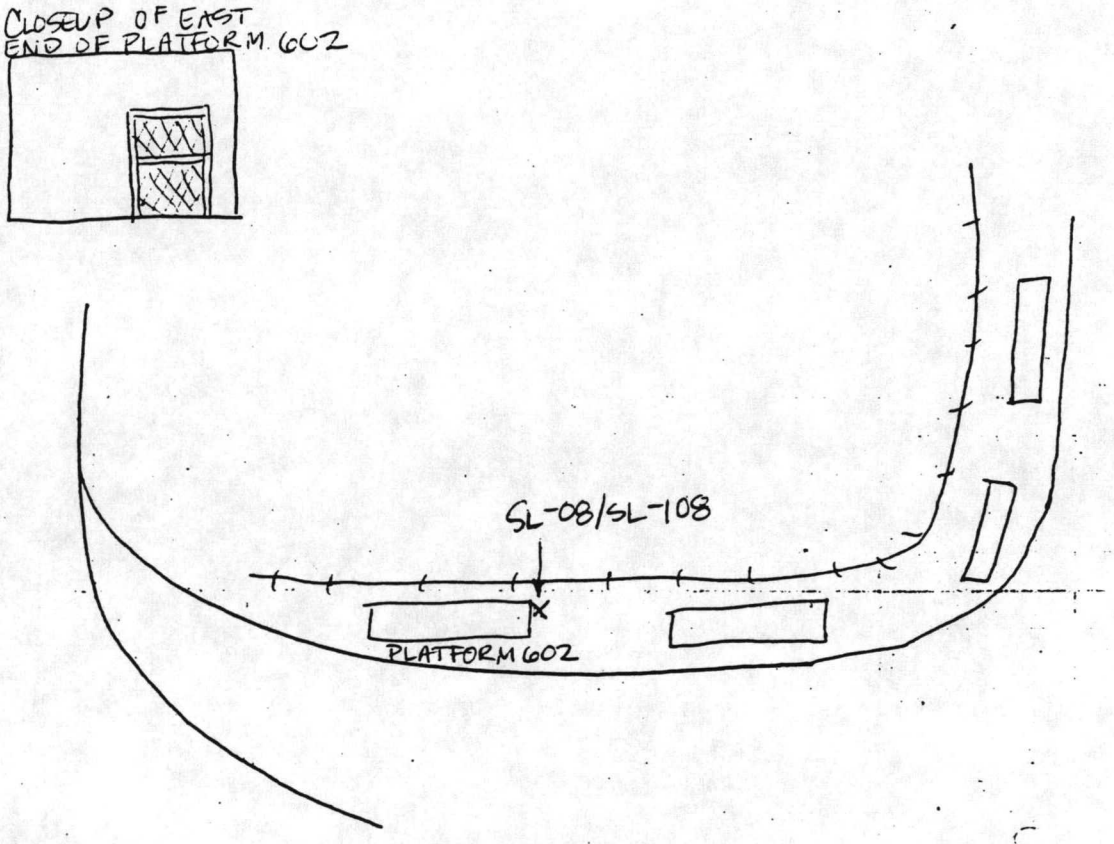
Locations SS-08a

March 30, 1998

Area D - Rail Yard

(Not to scale)

Gannett Fleming



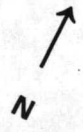


Figure D-9

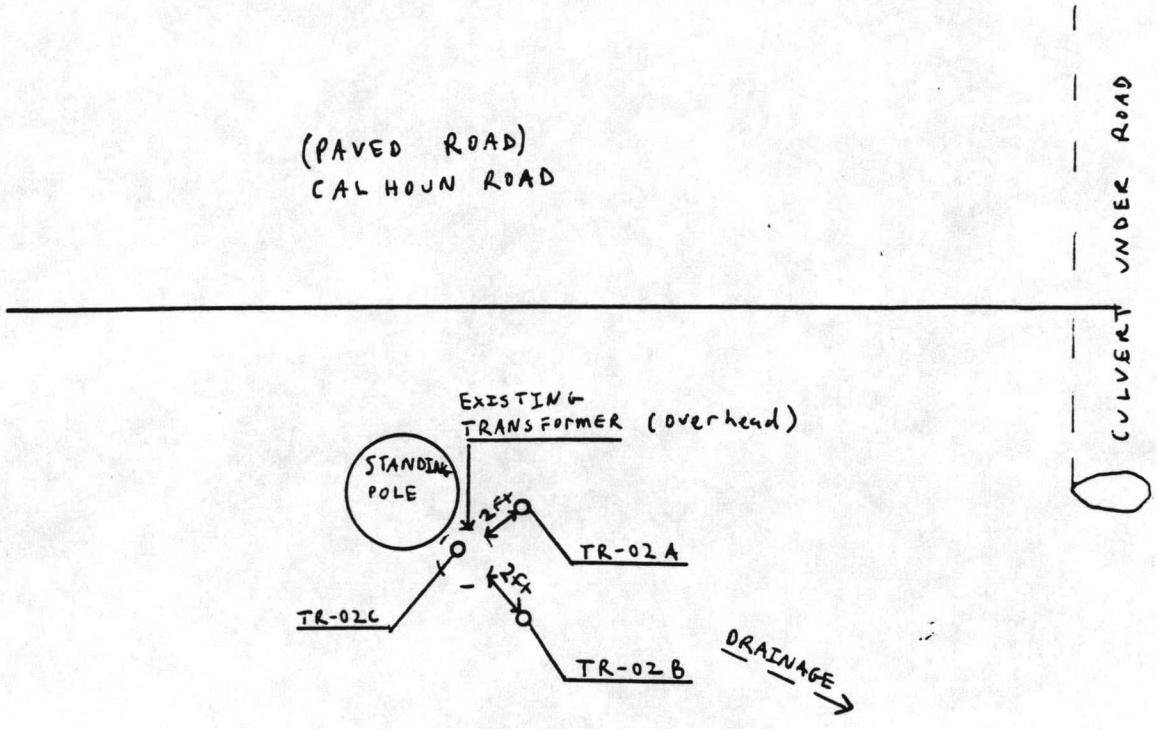
Locations SL-08 and SL-108

March 30, 1998

Area D - Rail Yard

(Not to scale)

Gannett Fleming



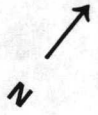


Figure D-10

Locations TR-02A through C

March 30, 1998

Area D - Rail Yard

PCB Screening Samples

(Not to scale)

Gannett Fleming

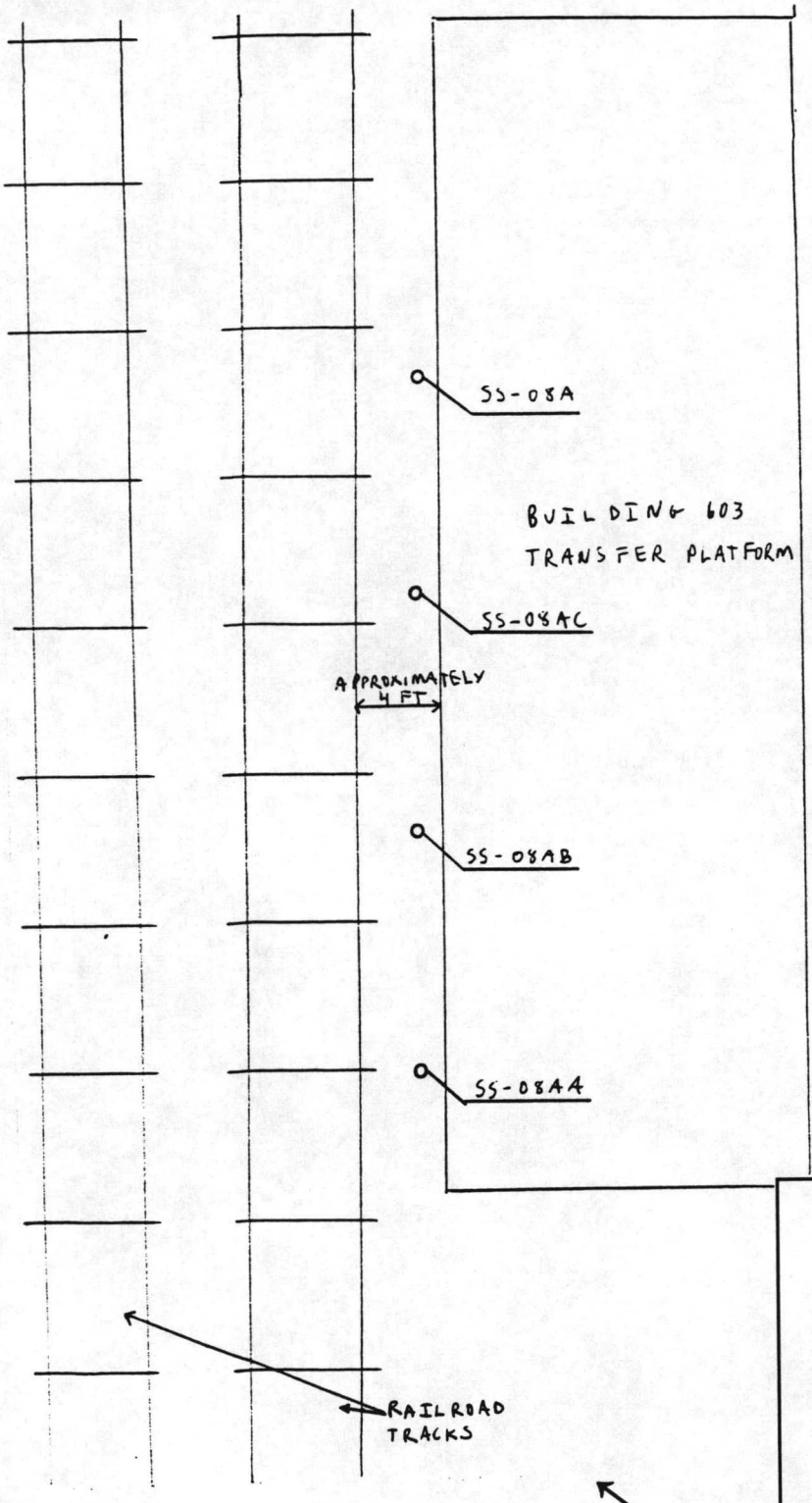


Figure D-11

Locations SS-08A through AC

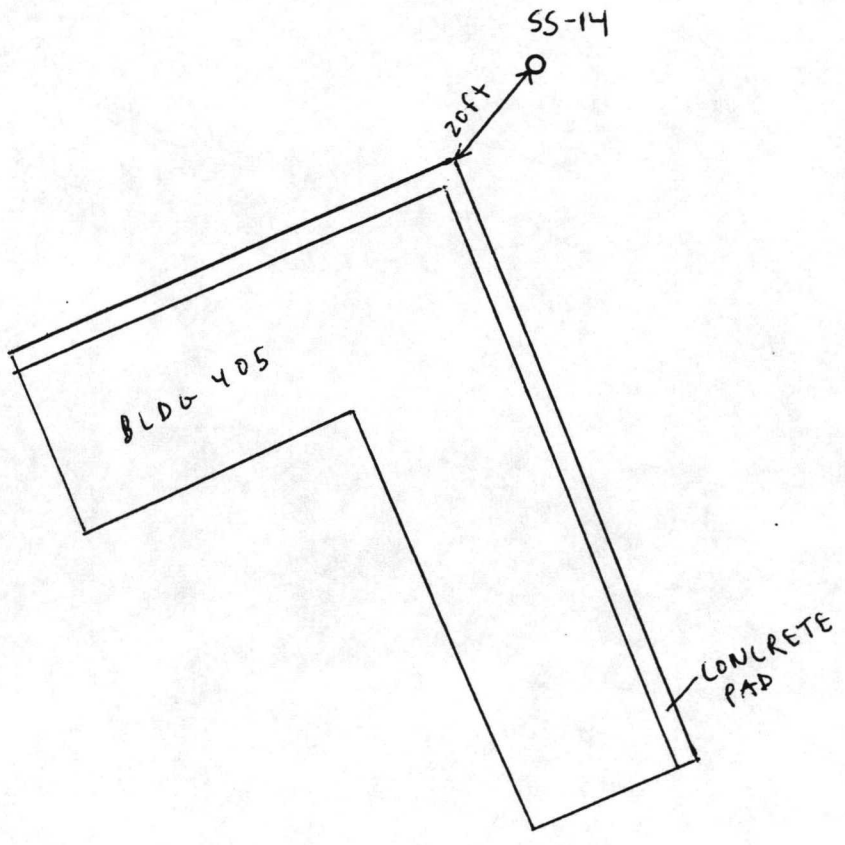
March 30, 1998

Area D - Rail Yard

TNT/RDX Screening Samples

(Not to scale)

Gannett Fleming



N

Figure D-12

Locations SS-14

March 31, 1998

Area E - Bag Loading Area

(Not to scale)

Gannett Fleming

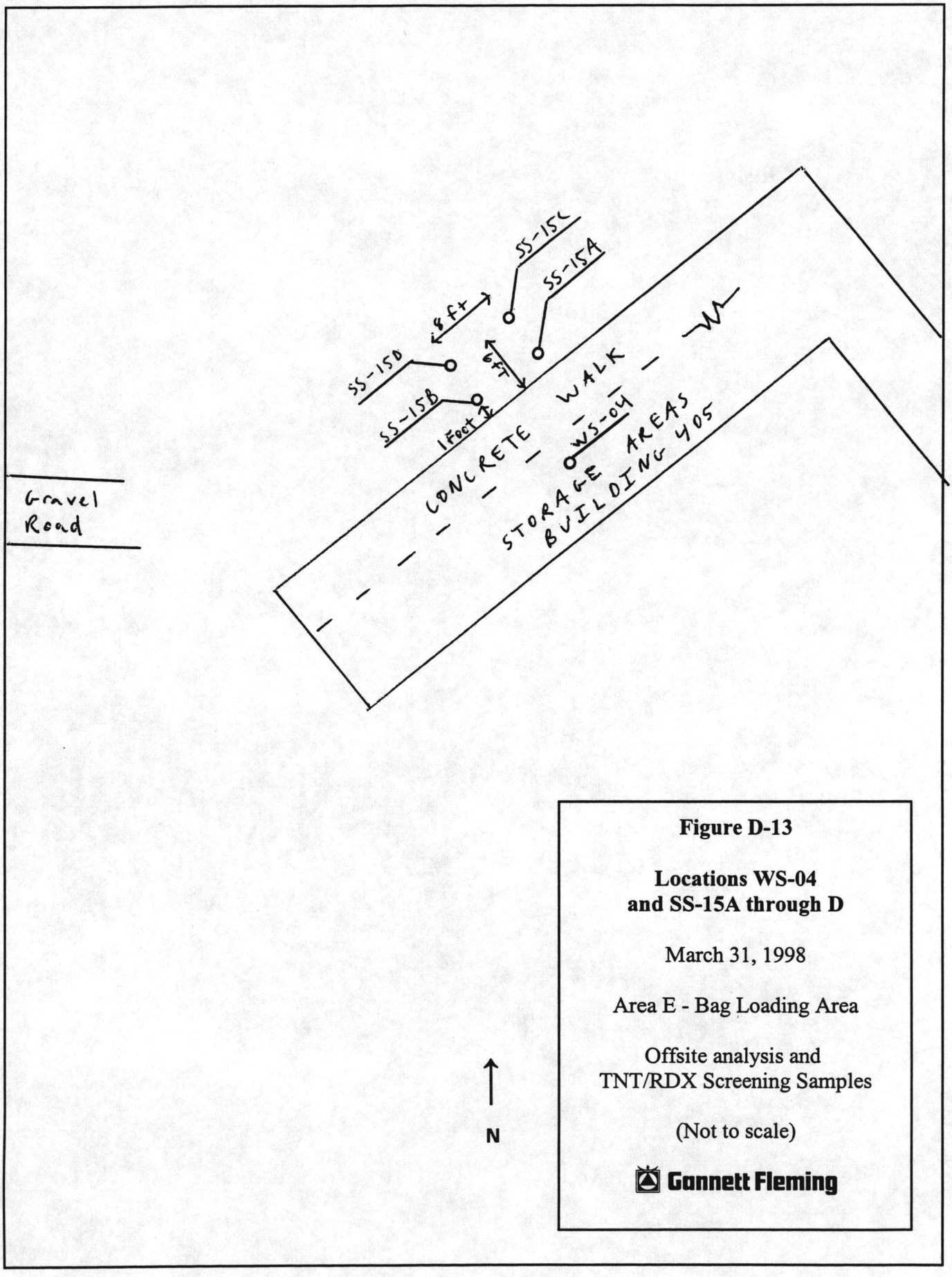


Figure D-13

Locations WS-04 and SS-15A through D

March 31, 1998

Area E - Bag Loading Area

Offsite analysis and TNT/RDX Screening Samples

(Not to scale)

Gannett Fleming

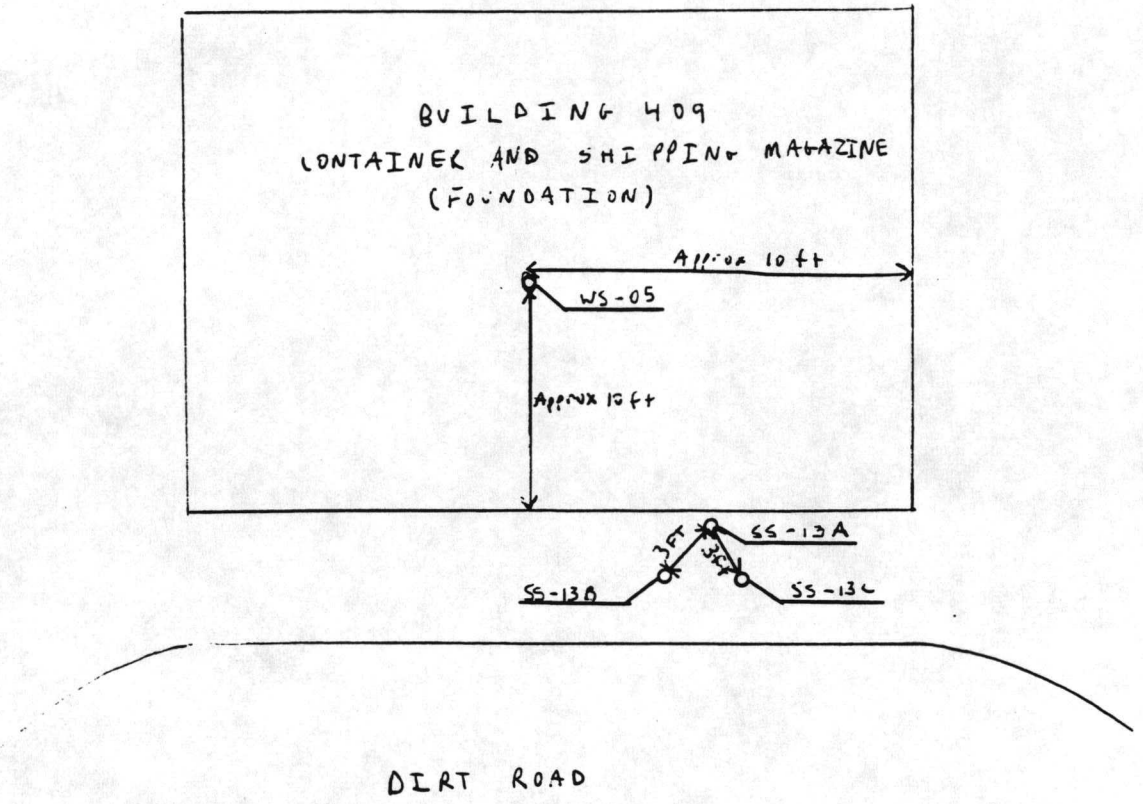


Figure D-14

Locations WS-05 and SS-13A through c

March 31, 1998

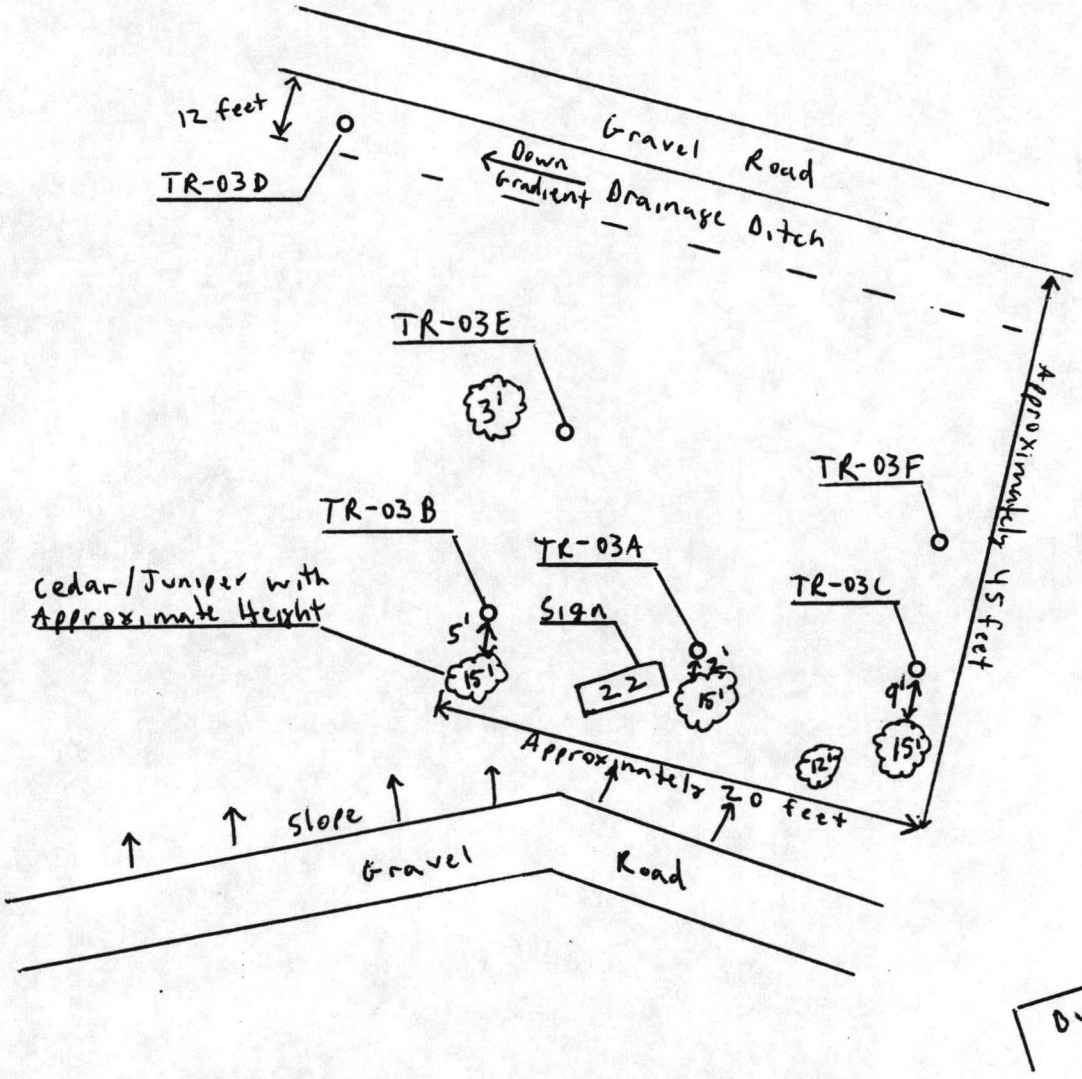
Area E - Bag Loading Area

Offsite analysis and TNT/RDX Screening Samples

(Not to scale)

Gannett Fleming

← N



N

Figure D-15

Locations TR-03A through F

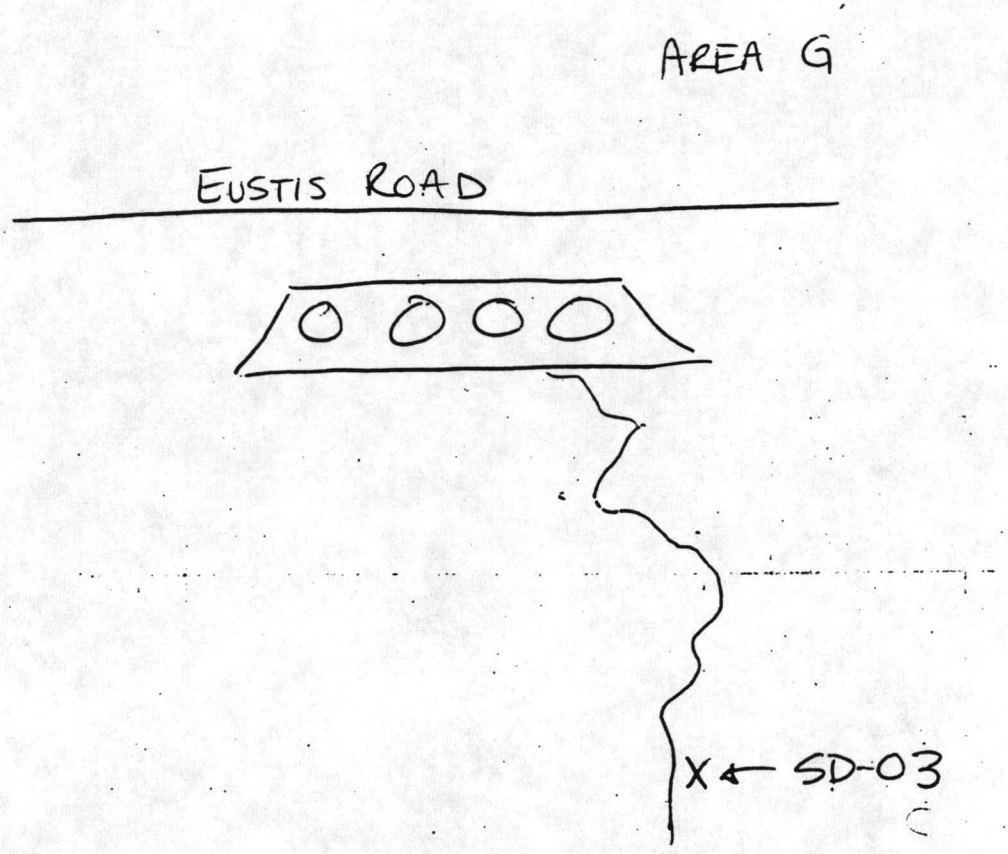
March 31, 1998

Area E - Bag Loading Area

PCB Screening Samples

(Not to scale)

Gannett Fleming



N

Figure D-16

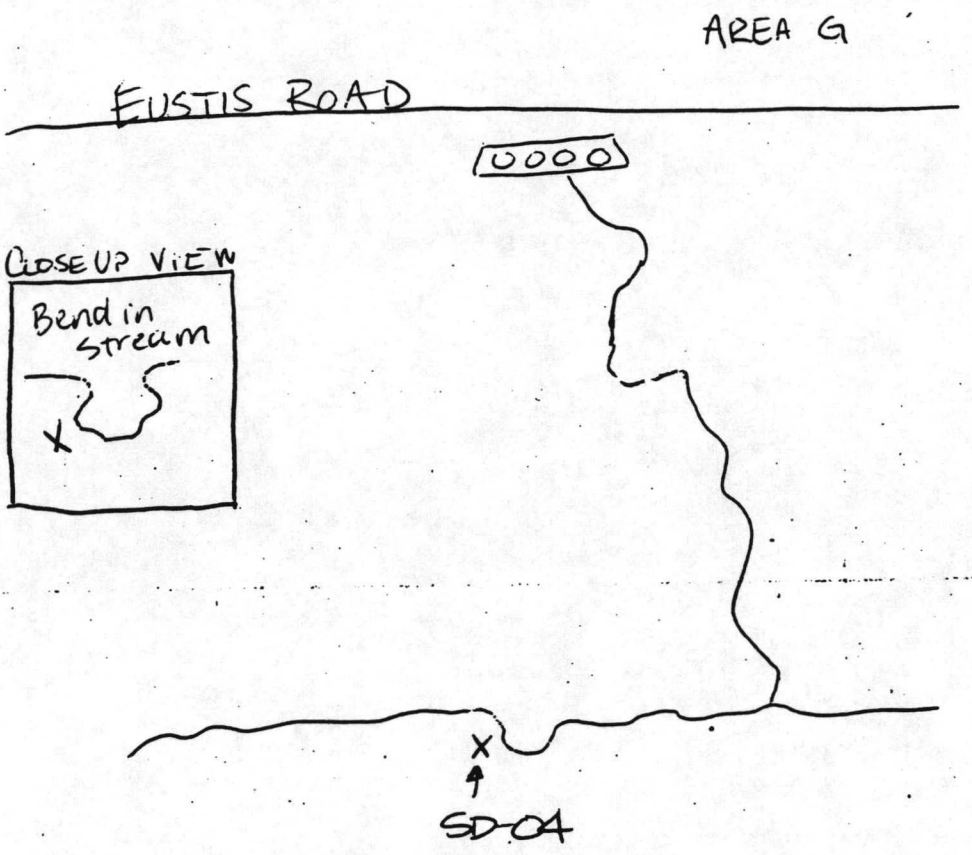
Locations SD-03

April 1, 1998

Area G - NRSD Stream

(Not to scale)

Gannett Fleming



N

Figure D-17

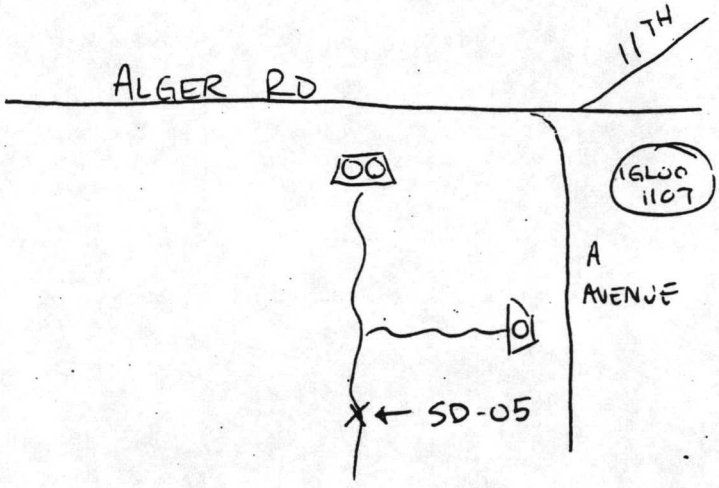
Locations SD-04

April 1, 1998

Area G - NRSD Stream

(Not to scale)

Gannett Fleming



AREA G

N

Figure D-18

Locations SD-05

April 1, 1998

Area G - NRSD Stream

(Not to scale)

Gannett Fleming

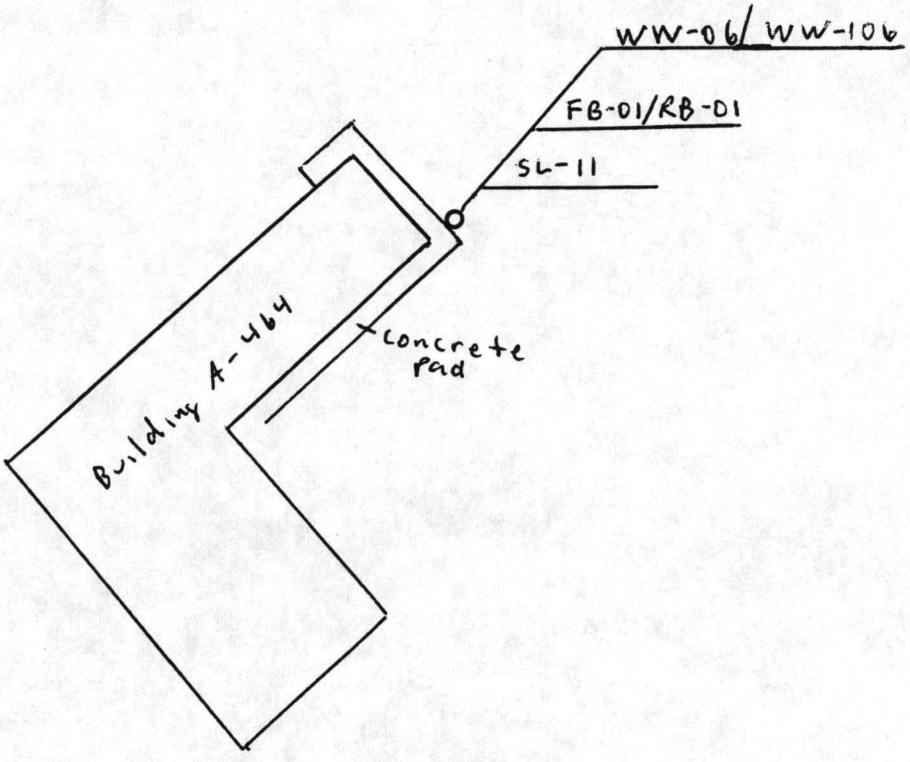


Figure D-19

Locations WW-06, WW-106
SL-11, FB-01, RB-01

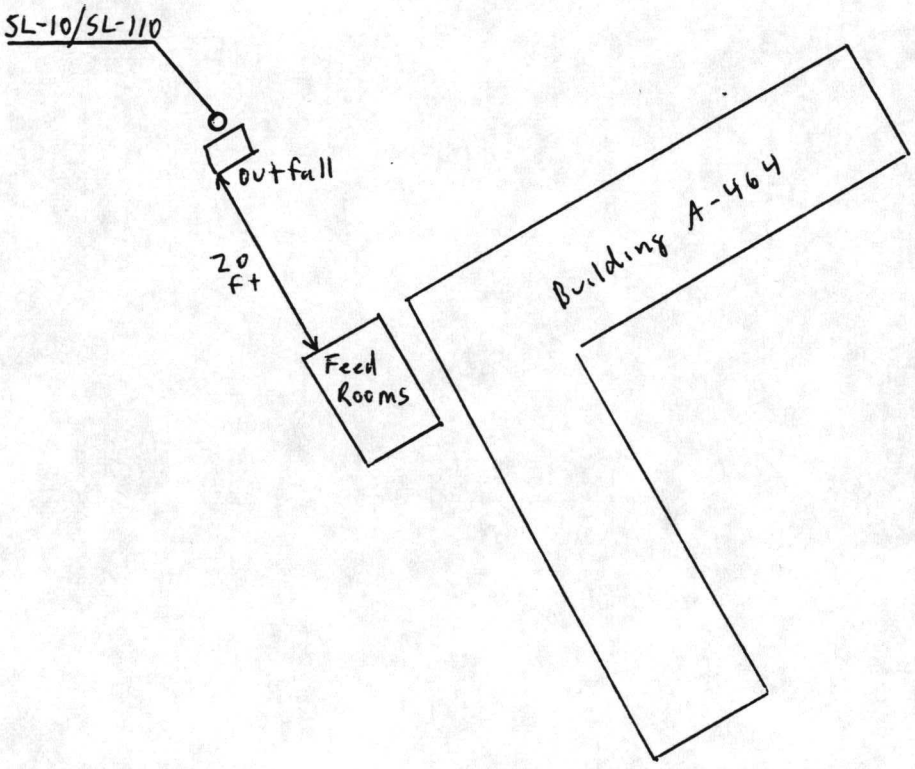
March 30, 1998

Area H - Bag Loading Area

(Not to scale)

Gannett Fleming

N



N

Figure D-20

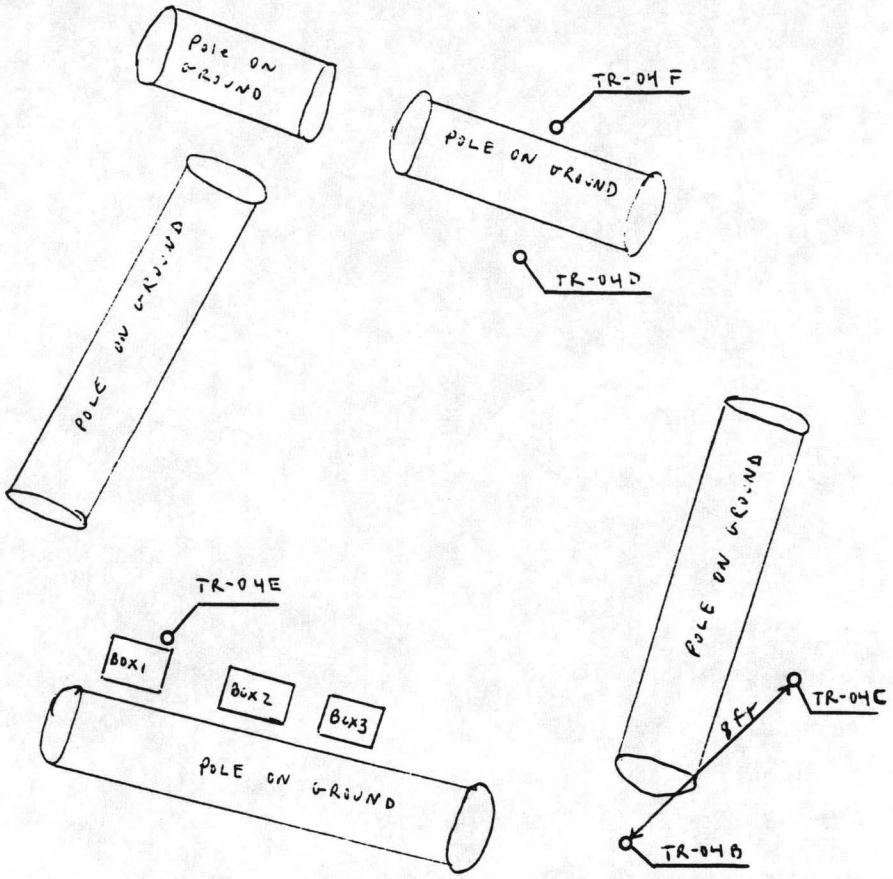
Locations SL-10 and SL-110

March 30, 1998

Area H - Bag Loading Area

(Not to scale)

Gannett Fleming



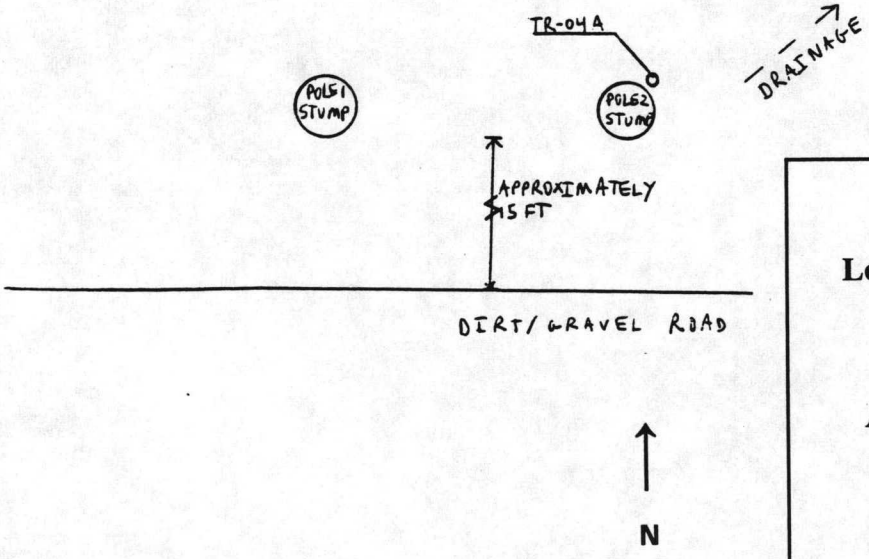


Figure D-21

Locations TR-04A through F

April 1, 1998

Area H - Bag Loading Area

PCB Screening Samples

(Not to scale)

Gannett Fleming

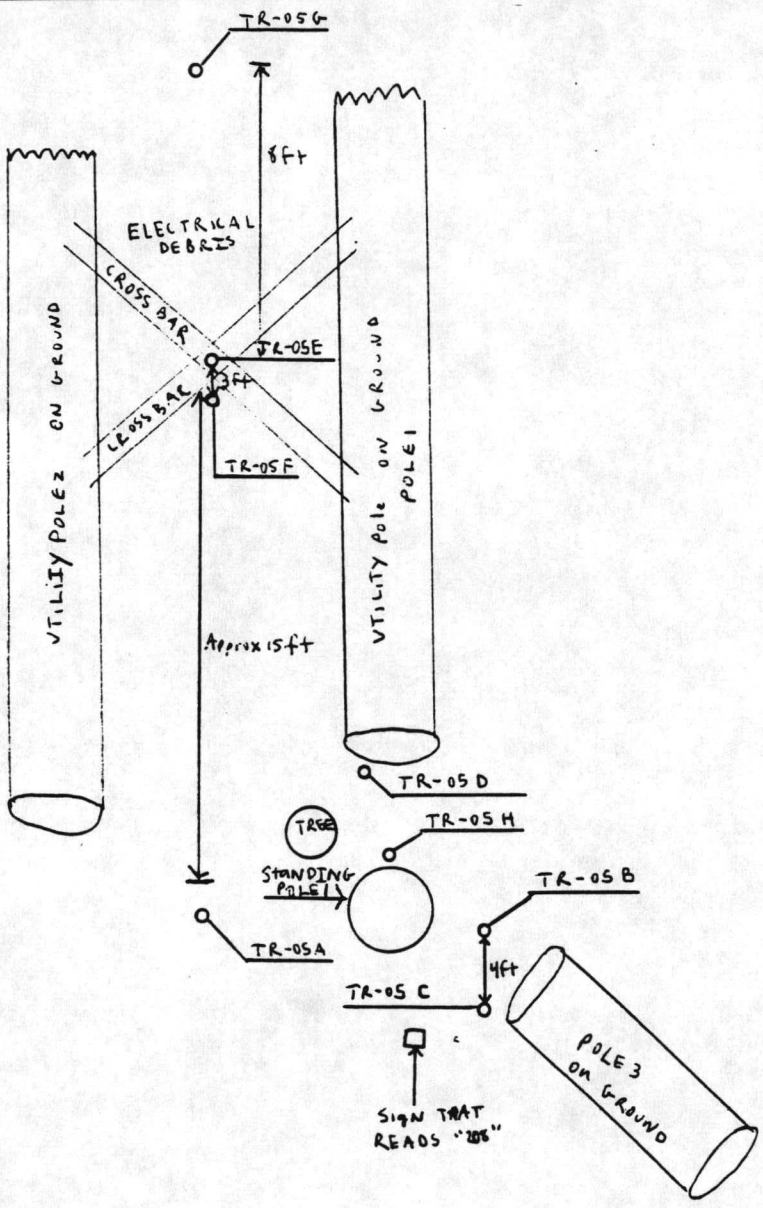


Figure D-22

Locations TR-05A through H

March 31, 1998

Area H - Bag Loading Area

PCB Screening Samples

(Not to scale)

Gannett Fleming

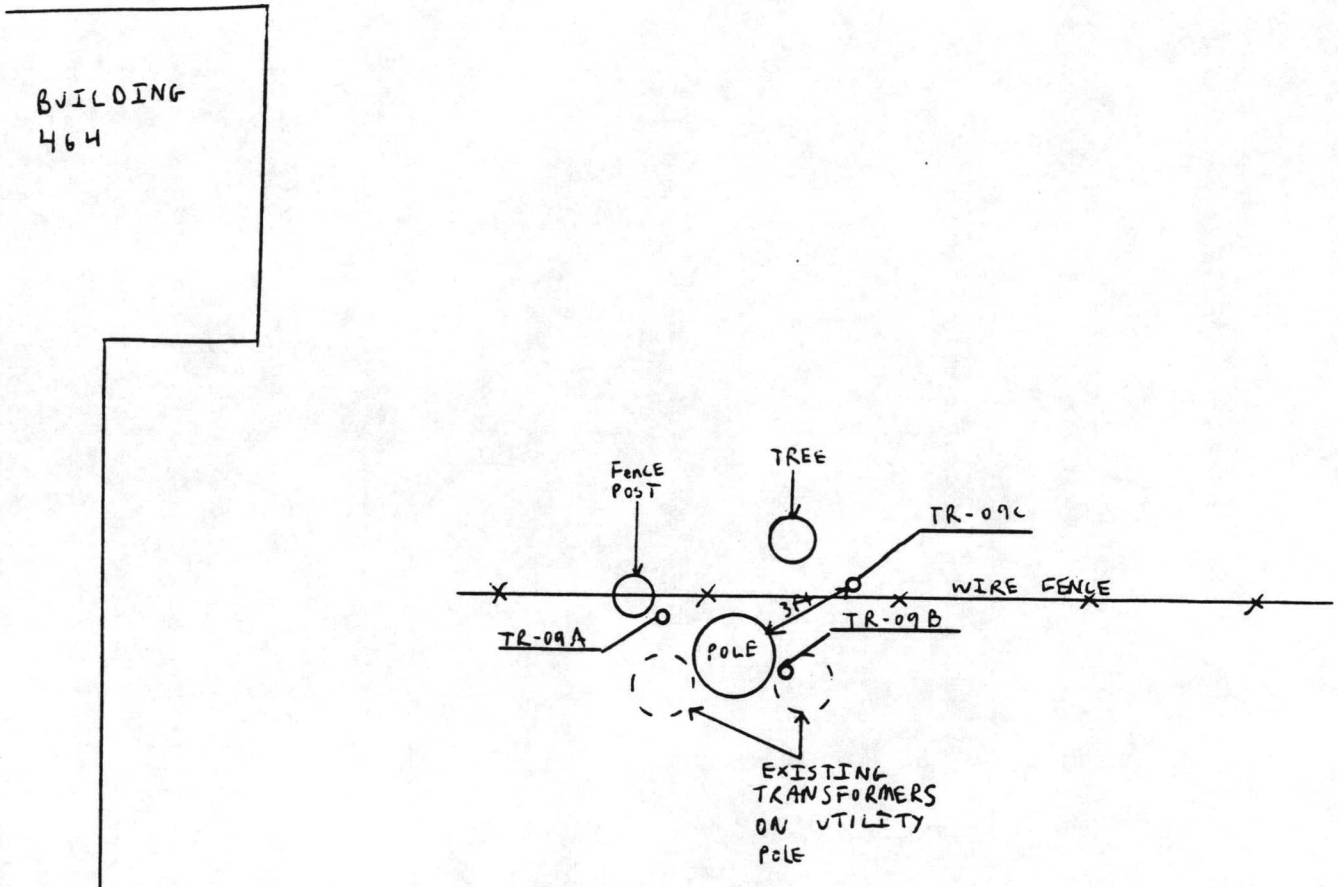


Figure D-23

Locations TR-09A through C

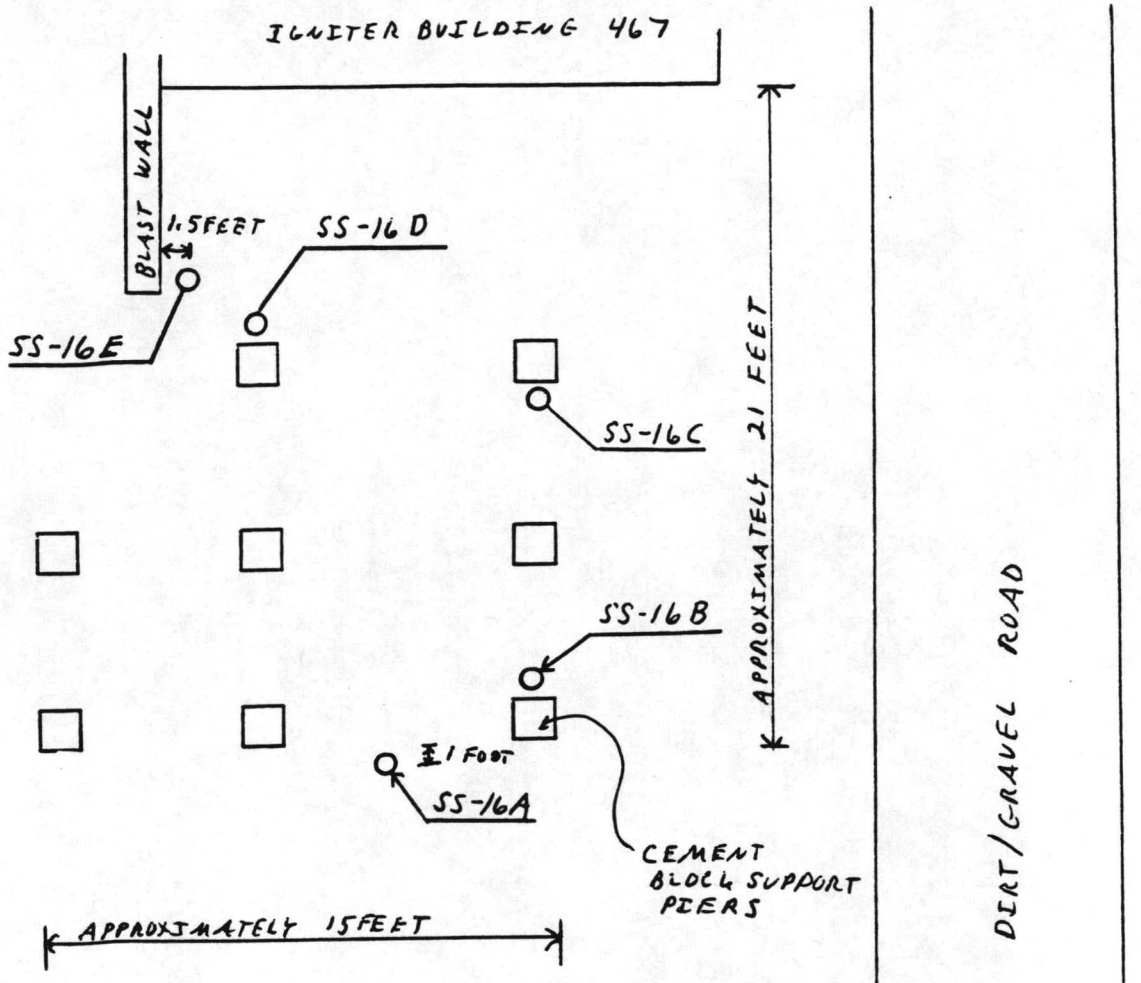
April 1, 1998

Area H - Bag Loading Area

PCB Screening Samples

(Not to scale)

Gannett Fleming



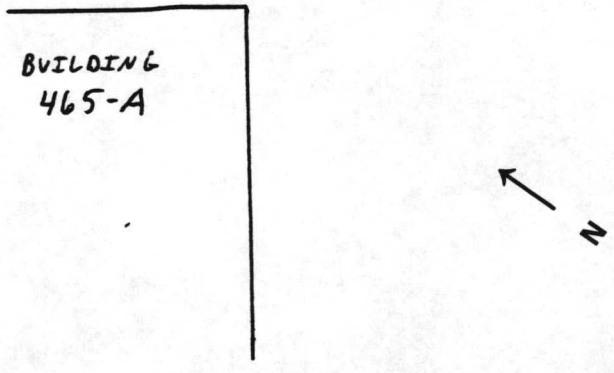


Figure D-24

Locations SS-16A through E

March 31, 1998

Area H - Bag Loading Area

TNT/RDX Screening Samples

(Not to scale)

Gannett Fleming

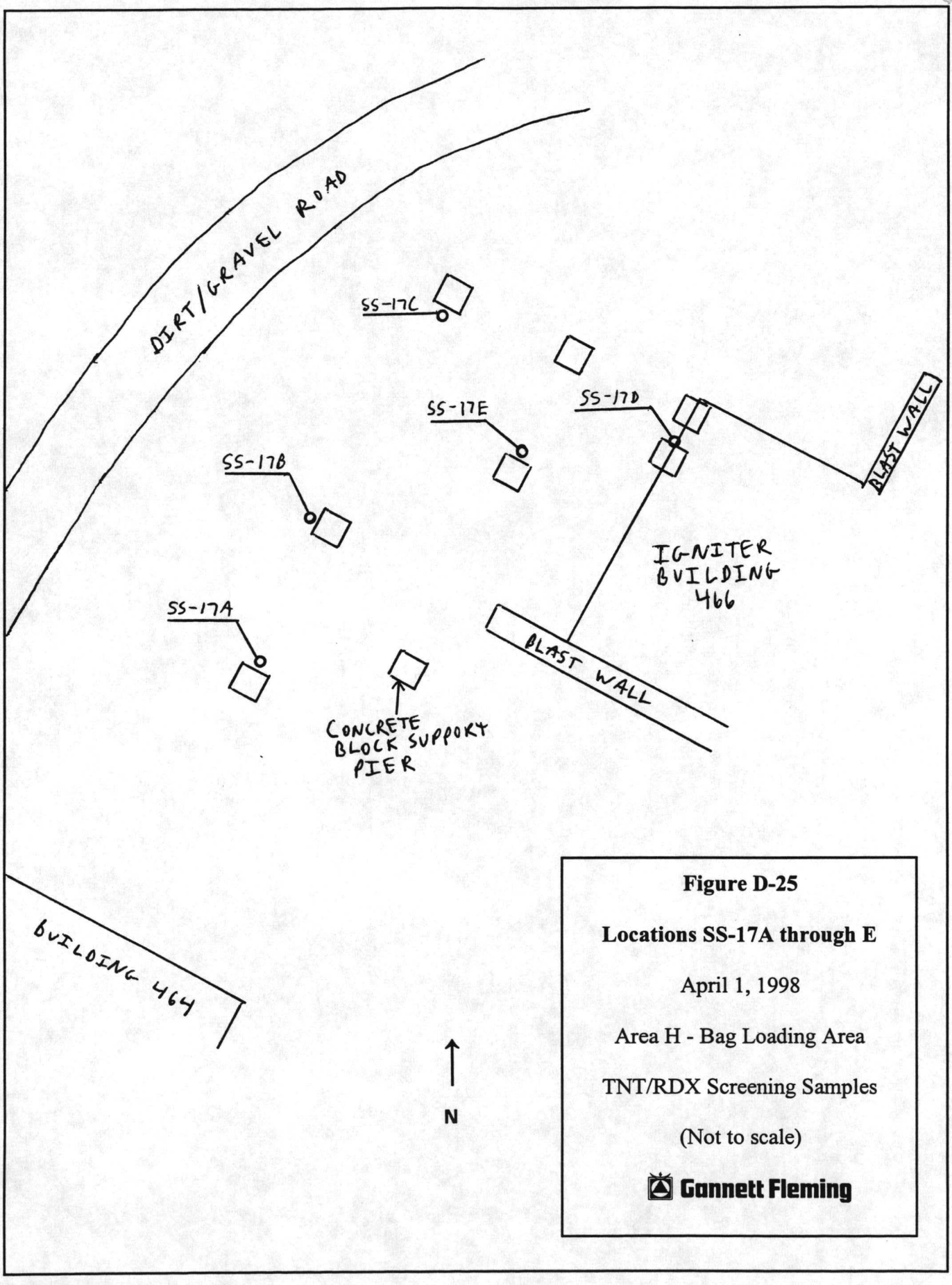


Figure D-25

Locations SS-17A through E

April 1, 1998

Area H - Bag Loading Area

TNT/RDX Screening Samples

(Not to scale)

Gannett Fleming

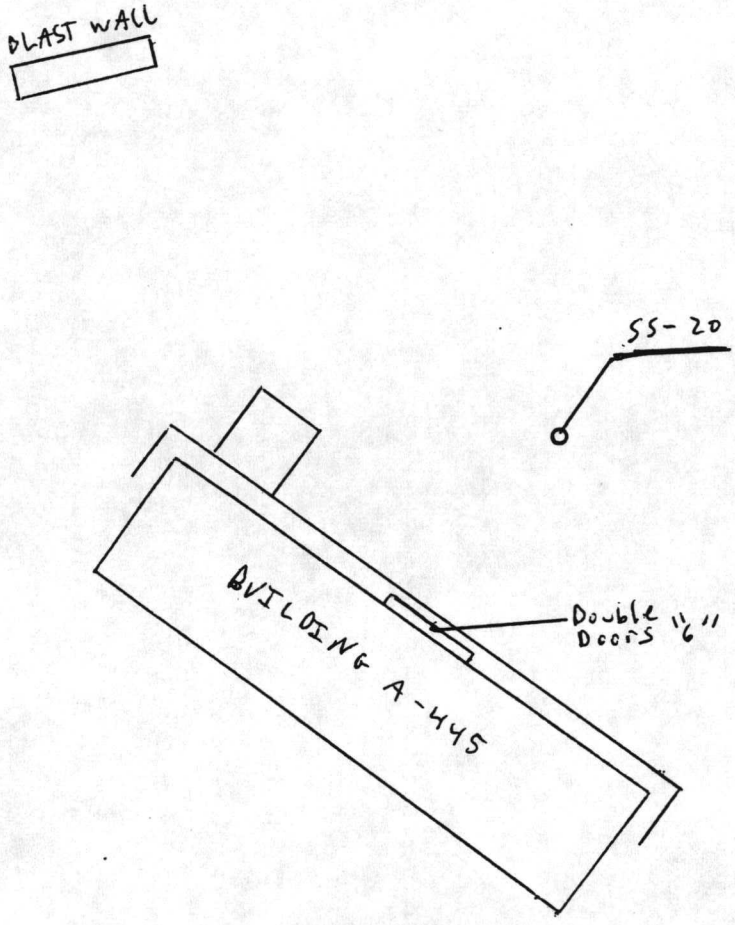


Figure D-26

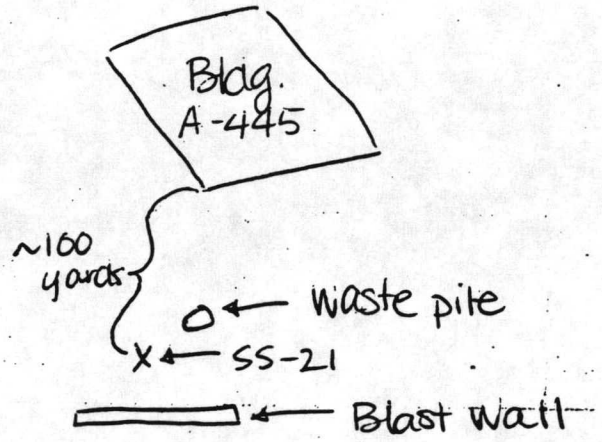
Locations SS-20

April 1, 1998

Area I - Bag Loading Area

(Not to scale)

Gannett Fleming



N

Figure D-27

Locations SS-21

April 1, 1998

Area I - Bag Loading Area

(Not to scale)

Gannett Fleming

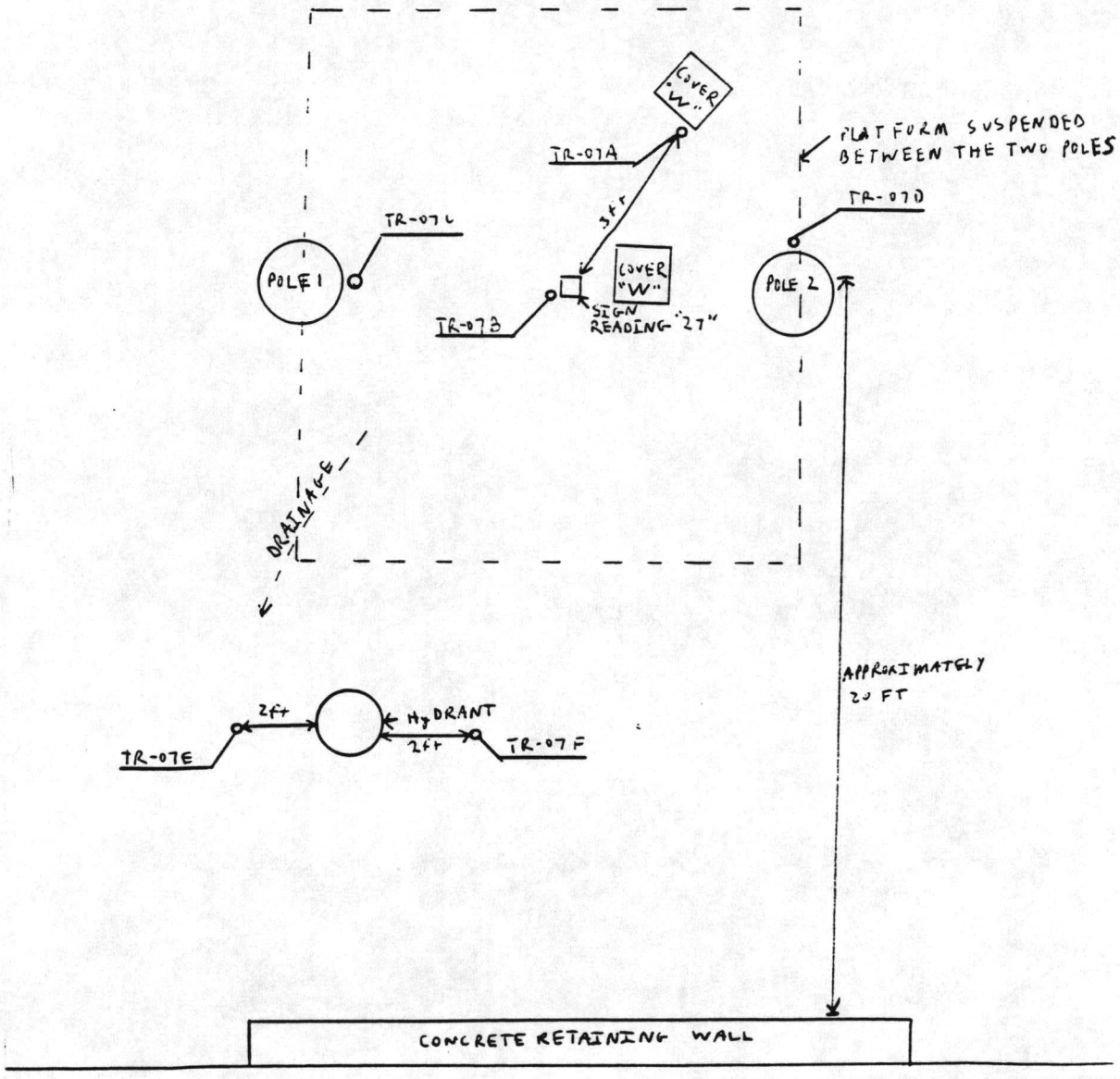


Figure D-28

Locations TR-07A through F

April 1, 1998

Area I - Bag Loading Area

PCB Screening Samples

(Not to scale)

Gannett Fleming

ORIGINAL

ATTACHMENT 1

FIELD LOG BOOKS - MARCH 31 THROUGH APRIL 2, 1998

(On File)

ATTACHMENT 2

CHAIN-OF-CUSTODY FORMS AND SAMPLE SHIPPING AIRBILLS

(On File)

ORIGINAL

ATTACHMENT 3

FIELD SCREENING RESULTS

ORIGINAL

RADFORD ARMY AMMUNITION PLANT - NEW RIVER STORAGE DEPOT
PCB SOIL SCREENING RESULTS MARCH 30 THROUGH APRIL 3, 1998

Area	PCB Screening Sample Number	Confirm-ation Sample Collected	DTechtor Analysis		
			Reference Reading	Sample Reading	PCB Conc. (ppm)
B - Igniter	TR-01A	X	343	11	0.5 - 1.0
	TR-01B	X	349	29	1.1 - 4.0
	TR-01C		345	20	0.5 - 1.0
	TR-01D		344	LO	<0.5
D - Rail Yard	TR-02A	X	334 - 336	14 - 22	0.5 - 4.0
	TR-02B		345	18	0.5 - 1.0
	TR-02C	X	346	54	4.1 - 15
E - Bag Loading Area 400	TR-03A		342	LO	<0.5
	TR-03B		316 - 330	1 - 13	<0.5 - 1.0
	TR-03C		344	LO	<0.5
	TR-03D		330	3	<0.5
	TR-03E	X	316 - 320	LO - 8	<0.5
	TR-03F		304 - 313	5 - 11	<0.5 - 1.0
H - Bag Loading Area 460	TR-04A	X	344	69	16 - 25
	TR-04B		348	60	4.1 - 15
	TR-04C		341	5	<0.5
	TR-04D		345	32	1.1 - 4.0
	TR-04E	X	344	HI	>25
	TR-04F	X (dup.)	336	46	4.1 - 15
H - Bag Loading Area 460	TR-05A	X	334 - 338	56 - 61	4.1 - 25
	TR-05B	X	336	36	1.1 - 4.0
	TR-05C		322	16	0.5 - 1.0
	TR-05D	X	344	47	4.1 - 15
	TR-05E		345	LO	<0.5
	TR-05F		348	2	<0.5
	TR-05G		LO	LO	<0.5
	TR-05H	---	---	---	---
H - Bag Loading Area 460	TR-09A		343	15	0.5 - 1.0
	TR-09B	X	345	46	4.1 - 15
	TR-09C		341	LO	<0.5
I - Bag Loading Area 440	TR-07A	X	348	55	4.1 - 15
	TR-07B		340	47	4.1 - 15
	TR-07C	X	334	69	16 - 25
	TR-07D		330	2	<0.5
	TR-07E		338	4	<0.5
	TR-07F		342	LO	<0.5

ORIGINAL

RADFORD ARMY AMMUNITION PLANT - NEW RIVER STORAGE DEPOT
RDX/TNT SOIL SCREENING RESULTS MARCH 30 THROUGH APRIL 3, 1998

Area	RDX/TNT Screening Sample Number	Confirm-ation Sample Collected	RDX DTechtor Analysis			TNT DTechtor Analysis		
			Reference Reading	Sample Reading	RDX Conc. (ppm)	Reference Reading	Sample Reading	TNT Conc. (ppm)
B - Igniter	SS-12	X	349	LO	<0.5	248	LO	<0.5
	SS-12A		334	LO	<0.5	239	LO	<0.5
	SS-12B		350	LO	<0.5	242	LO	<0.5
	SS-12C	X	349	LO	<0.5	249	8	0.5 - 1.5
D - Rail Yard	SS-08A	X	348	LO	<0.5	235	10	0.5 - 1.5
	SS-08AA		346	LO	<0.5	243	LO	<0.5
	SS-08AB		345	LO	<0.5	246	LO	<0.5
	SS-08AC		348	LO	<0.5	243	LO	<0.5
E - Bag Loading Area 400	SS-13A		345	LO	<0.5	246	LO	<0.5
	SS-13B	X	328 - 347	LO - 22	<0.5 - 2.5	231	LO	<0.5
	SS-13C	X	344	5	0.5 - 1.5	230	LO	<0.5
E - Bag Loading Area 400	SS-14	X	337	LO	<0.5	237	LO	<0.5
E - Bag Loading Area 400	SS-15A		338	LO	<0.5	246	LO	<0.5
	SS-15B	X	330 - 346	LO - 5	<0.5 - 1.5	246	LO	<0.5
	SS-15C	X	332	18 - 33	0.5 - 2.5	249	LO	<0.5
	SS-15D		322	LO	<0.5	250	LO	<0.5
H - Bag Loading Area 460	SS-16A		345	LO	<0.5	249	LO	<0.5
	SS-16B		342	LO	<0.5	250	LO	<0.5
	SS-16BD		343	LO	<0.5	246	LO	<0.5
	SS-16C		341	LO	<0.5	239	26	1.5 - 3.0
	SS-16D		345	LO	<0.5	248	LO	<0.5
	SS-16E		337	LO	<0.5	246	LO	<0.5
	SS-16ED		344	LO	<0.5	247	LO	<0.5
H - Bag Loading Area 460	SS-17A		346	LO	<0.5	247	LO	<0.5
	SS-17AD		330	LO	<0.5	247	LO	<0.5
	SS-17B		345	LO	<0.5	247	LO	<0.5
	SS-17C		338	LO	<0.5	247	3	0.5 - 1.5
	SS-17D		349	6	0.5 - 1.5	246	LO	<0.5
	SS-17E		348	LO	<0.5	246	LO	<0.5
	SS-17ED		346	LO	<0.5	232	LO	<0.5

ORIGINAL

ATTACHMENT 4

DATA SUMMARY TABLES

CLP Methods ORIGINAL
11/10/98

Data Summary Table of Samples Collected at Area A: Burning Ground

Matrix: Surface Soil
Samples: SS-01 06/03/97; SS-02 06/03/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	2 / 2	18,200	28,900	7.82E+04		1.00E+00	
Arsenic	2 / 2	6.3	7.6	4.26E-01	1.50E+01	3.28E+02	
Barium	2 / 2	79.3	80.3	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	2 / 2	0.5	0.6	1.60E+02	1.80E+02	2.00E-02	
Cadmium	1 / 2	0.8	0.8	3.91E+01	6.00E+00	2.50E+00	
Calcium	2 / 2	55,700	62,700				
Chromium	2 / 2	32.2	44.2				
Cobalt	2 / 2	7.5	7.7	4.69E+03		1.00E+02	2.00E+02
Copper	2 / 2	18.4	38.6	3.13E+03		1.50E+01	
Iron	2 / 2	26,700	28,000	2.35E+04		3.26E+03	1.20E+01
Lead	2 / 2	55.4	199			2.00E+00	1.00E-02
Magnesium	2 / 2	26,000	28,300			4.40E+06	4.40E+06
Manganese	2 / 2	156	208	1.56E+03		3.30E+02	3.30E+02
Mercury	2 / 2	0.1	0.1		3.00E+00	5.80E-02	5.80E-02
Nickel	2 / 2	13.8	17.3	1.56E+03	2.10E+01	2.00E+00	
Potassium	2 / 2	2,060	2,310				
Thallium	2 / 2	0.2	0.2	5.48E+00	4.00E-01	1.00E-03	
Vanadium	2 / 2	64.6	70	5.48E+02		5.00E-01	5.80E+01
Zinc	2 / 2	294	1,210	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
1,1-Dichloroethene	1 / 2	0.002	0.002	1.06E+00	3.00E-02		
Benzene	1 / 2	0.001	0.001	2.20E+01	2.00E-02	1.00E-01	1.00E-01
Chlorobenzene	1 / 2	0.001	0.001	1.56E+03	6.00E-01		1.00E-01
Toluene	1 / 2	0.001	0.001	1.56E+04	5.00E+00	1.00E-01	1.00E-01
Trichloroethene	1 / 2	0.001	0.001	5.81E+01	2.00E-02	3.00E-01	3.00E-01
Pesticides/PCBs							
Semivolatiles							
bis(2-Ethylhexyl)phthalate	2 / 2	0.1	0.2	4.56E+01	1.10E+01		
Di-n-butylphthalate	1 / 2	0.04	0.04	7.82E+03	1.20E+02		
Nitroaromatics/Nitroglycerin							

BASED ON TWO SAMPLING EVENTS

Data Summary Table of Samples Collected at Area B: Igniter Area

Matrix: Surface Soil
Samples: SS-11A 03/30/98; SS-11B 03/30/98; SS-12 03/30/98; SS-11 06/03/97; SS-03 06/03/97; TR-01B 04/02/98; TR-01A 04/02/98; SS-12C 03/31/98

				Screening Concentrations			
		Range of Detected Concentrations		RBC Residential Soil	RBC Soil to	EPA Region III BTAG Soil[1]	
Contaminant	Frequency of Detection	Minimum (µg/g)	Maximum (µg/g)	Ingestion[1] (µg/g)	Groundwater[1] (µg/g)	Flora (µg/g)	Fauna (µg/g)
Inorganics - Total							
Aluminum	5 / 5	3,900	15,300	7.82E+04		1.00E+00	
Antimony	1 / 5	0.6	0.6	3.13E+01		4.80E-01	
Arsenic	5 / 5	25.2	164	4.26E-01	1.50E+01	3.28E+02	
Barium	5 / 5	50.2	11,800	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	3 / 5	0.5	0.6	1.60E+02	1.80E+02	2.00E-02	
Cadmium	5 / 5	2.3	7.8	3.91E+01	6.00E+00	2.50E+00	
Calcium	5 / 5	28,000	101,000				
Chromium	5 / 5	54.4	99.2				
Cobalt	5 / 5	23.8	85.6	4.69E+03		1.00E+02	2.00E+02
Copper	5 / 5	24,600	56,500	3.13E+03		1.50E+01	
Iron	5 / 5	27,500	35,800	2.35E+04		3.26E+03	1.20E+01
Lead	5 / 5	207	1,040			2.00E+00	1.00E-02
Magnesium	5 / 5	28,800	82,200			4.40E+06	4.40E+06
Manganese	5 / 5	225	498	1.56E+03		3.30E+02	3.30E+02
Mercury	2 / 5	0.1	0.2		3.00E+00	5.80E-02	5.80E-02
Nickel	5 / 5	61	173	1.56E+03	2.10E+01	2.00E+00	
Potassium	5 / 5	664	837				
Selenium	1 / 5	1.2	1.2	3.91E+02	3.00E+00	1.80E+00	1.80E+00
Silver	5 / 5	3.6	22.5	3.91E+02		9.80E-06	
Sodium	1 / 5	101	101				
Thallium	5 / 5	0.3	0.8	5.48E+00	4.00E-01	1.00E-03	
Vanadium	5 / 5	10.8	60.2	5.48E+02		5.00E-01	5.80E+01
Zinc	5 / 5	626	21,800	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
Aroclor-1260	2 / 4	0.37	1.04	3.19E-01			
Endrin	1 / 4	0.024	0.024	2.35E+01	4.00E-01	1.00E-01	1.00E-01
Semivolatiles							
Acenaphthylene	1 / 4	0.3	0.3			1.00E-01	1.00E-01
Anthracene	1 / 4	1.01	1.01	2.35E+04	4.30E+03	1.00E-01	1.00E-01
Benzo(a)anthracene	3 / 4	0.07	3.54	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	3 / 4	0.04	5.24	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	3 / 4	0.09	12.59	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(g,h,i)perylene	1 / 4	0.11	0.11			1.00E-01	1.00E-01
Benzo(k)fluoranthene	3 / 4	0.05	6.51	8.75E+00	4.00E+00	1.00E-01	1.00E-01
Benzoic Acid	2 / 4	0.1	0.3	3.13E+05	2.80E+02		
bis(2-Ethylhexyl)phthalate	4 / 4	0.2	5.68	4.56E+01	1.10E+01		
Butylbenzylphthalate	1 / 4	0.13	0.13	1.56E+04	6.80E+01		
Carbazole	1 / 4	0.5	0.5	3.19E+01	5.00E-01		
Chrysene	4 / 4	0.06	7.65	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Di-n-butylphthalate	1 / 4	0.07	0.07	7.82E+03	1.20E+02		
Dibenzo(a,h)anthracene	1 / 4	0.94	0.94	8.75E-02	1.10E+01	1.00E-01	1.00E-01
Diethylphthalate	1 / 4	0.07	0.07	6.26E+04	1.10E+02		
Fluoranthene	3 / 4	0.2	4.39	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	1 / 4	6.06	6.06	8.75E-01	3.50E+01	1.00E-01	1.00E-01
Phenanthrene	3 / 4	0.1	0.3			1.00E-01	1.00E-01
Pyrene	3 / 4	0.2	4.85	2.35E+03	1.40E+03	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							
Asbestos		Area %	Area %				

Data Summary Table of Samples Collected at Area B: Igniter Area

Matrix: Surface Soil
Samples: SS-11A 03/30/98; SS-11B 03/30/98; SS-12 03/30/98; SS-11 06/03/97; SS-03 06/03/97; TR-01B 04/02/98; TR-01A 04/02/98; SS-12C 03/31/98

		Range of Detected Concentrations		Screening Concentrations			
				RBC Residential Soil	RBC Soil to	EPA Region III BTAG Soil[1]	
Contaminant	Frequency of Detection	Minimum (µg/g)	Maximum (µg/g)	Ingestion[1] (µg/g)	Groundwater[1] (µg/g)	Flora (µg/g)	Fauna (µg/g)
Chrysotile	1 / 1	2.1	2.1				

Data Summary Table of Samples Collected at Area B: Igniter Area

Matrix: Waste Solid
Samples: WS-03 03/30/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Maximum (µg/g)	Screening Concentrations RBC Residential Soil Ingestion[1] (µg/g)	RBC Soil to Groundwater[1] (µg/g)	EPA Region III BTAG Soil[1] Flora (µg/g)	Fauna (µg/g)
Inorganics - Total							
Aluminum	1 / 1	2,680	2,680	7.82E+04		1.00E+00	
Arsenic	1 / 1	204	204	4.26E-01	1.50E+01	3.28E+02	
Barium	1 / 1	2,080	2,080	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Cadmium	1 / 1	2.8	2.8	3.91E+01	6.00E+00	2.50E+00	
Calcium	1 / 1	126,000	126,000				
Chromium	1 / 1	69.3	69.3				
Cobalt	1 / 1	57.8	57.8	4.69E+03		1.00E+02	2.00E+02
Copper	1 / 1	54,200	54,200	3.13E+03		1.50E+01	
Iron	1 / 1	30,600	30,600	2.35E+04		3.26E+03	1.20E+01
Lead	1 / 1	308	308			2.00E+00	1.00E-02
Magnesium	1 / 1	100,000	100,000			4.40E+06	4.40E+06
Manganese	1 / 1	201	201	1.56E+03		3.30E+02	3.30E+02
Mercury	1 / 1	0.1	0.1		3.00E+00	5.80E-02	5.80E-02
Nickel	1 / 1	147	147	1.56E+03	2.10E+01	2.00E+00	
Potassium	1 / 1	778	778				
Silver	1 / 1	15.9	15.9	3.91E+02		9.80E-06	
Sodium	1 / 1	128	128				
Thallium	1 / 1	0.4	0.4	5.48E+00	4.00E-01	1.00E-03	
Zinc	1 / 1	3,370	3,370	2.35E+04	4.20E+04	1.00E+01	
Nitroaromatics/Nitroglycerin							
Asbestos		Area %	Area %				
Chrysotile	1 / 1	2.6	2.6				

Data Summary Table of Samples Collected at Area C: Burning Ground

Matrix: Surface Soil
Samples: SS-04 06/03/97; SS-04A 06/03/97; SS-05 06/03/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	3 / 3	13,600	20,300	7.82E+04		1.00E+00	
Arsenic	3 / 3	6.1	9.7	4.26E-01	1.50E+01	3.28E+02	
Barium	3 / 3	22.4	35.6	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	3 / 3	0.6	0.7	1.60E+02	1.80E+02	2.00E-02	
Calcium	3 / 3	702	1,080				
Chromium	3 / 3	34.4	39.1				
Cobalt	3 / 3	5.1	13.6	4.69E+03		1.00E+02	2.00E+02
Copper	3 / 3	25.6	57.6	3.13E+03		1.50E+01	
Iron	3 / 3	35,700	47,800	2.35E+04		3.26E+03	1.20E+01
Lead	3 / 3	27.5	310			2.00E+00	1.00E-02
Magnesium	3 / 3	524	763			4.40E+06	4.40E+06
Manganese	3 / 3	188	347	1.56E+03		3.30E+02	3.30E+02
Nickel	3 / 3	10.2	18.9	1.56E+03	2.10E+01	2.00E+00	
Potassium	3 / 3	458	684				
Vanadium	3 / 3	66.3	73.7	5.48E+02		5.00E-01	5.80E+01
Zinc	3 / 3	85.7	205	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Carbon Disulfide	1 / 3	0.0008	0.0008	7.82E+03	1.40E+01		
Pesticides/PCBs							
Aroclor-1254	2 / 3	0.047	0.084	3.19E-01			
Semivolatiles							
bis(2-Ethylhexyl)phthalate	3 / 3	0.07	0.1	4.56E+01	1.10E+01		
Di-n-butylphthalate	1 / 3	0.04	0.04	7.82E+03	1.20E+02		
Nitroaromatics/Nitroglycerin							
Dioxins/Furans							
1,2,3,4,6,7,8,9-OCDD	3 / 3	5.14E-04	8.36E-04				
1,2,3,4,6,7,8-HpCDD	3 / 3	1.37E-05	2.19E-05				
1,2,3,4,7,8-HxCDF	1 / 3	8.00E-07	8.00E-07				
1,2,3,6,7,8-HxCDD	2 / 3	5.00E-07	1.10E-06				
1,2,3,7,8,9-HxCDD	1 / 3	6.00E-07	6.00E-07				
Other HpCDD	3 / 3	1.19E-05	1.87E-05				
Other HpCDF	3 / 3	2.50E-06	4.70E-06				
Other HxCDD	3 / 3	3.50E-06	4.90E-06				
Other HxCDF	3 / 3	4.70E-06	1.59E-05				
Other PeCDF	3 / 3	1.20E-06	3.90E-06				
Other TCDF	2 / 3	1.20E-06	1.20E-06				
Toxicity Equivalents (Dioxins/Furans)	3 / 3	7.00E-07	1.20E-06	4.30E-06			1.00E+01

Data Summary Table of Samples Collected at Area C: Burning Ground

Matrix: Waste Solid
Samples: WS-02 06/03/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	1 / 1	21,400	21,400	7.82E+04		1.00E+00	
Arsenic	1 / 1	16.4	16.4	4.26E-01	1.50E+01	3.28E+02	
Barium	1 / 1	91.9	91.9	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	1 / 1	0.8	0.8	1.60E+02	1.80E+02	2.00E-02	
Cadmium	1 / 1	1.1	1.1	3.91E+01	6.00E+00	2.50E+00	
Calcium	1 / 1	3,680	3,680				
Chromium	1 / 1	58.8	58.8				
Cobalt	1 / 1	12.8	12.8	4.69E+03		1.00E+02	2.00E+02
Copper	1 / 1	108	108	3.13E+03		1.50E+01	
Iron	1 / 1	55,800	55,800	2.35E+04		3.26E+03	1.20E+01
Lead	1 / 1	357	357			2.00E+00	1.00E-02
Magnesium	1 / 1	2,630	2,630			4.40E+06	4.40E+06
Manganese	1 / 1	293	293	1.56E+03		3.30E+02	3.30E+02
Mercury	1 / 1	0.1	0.1		3.00E+00	5.50E-02	5.50E-02
Nickel	1 / 1	28.5	28.5	1.56E+03	2.10E+01	2.00E+00	
Potassium	1 / 1	900	900				
Thallium	1 / 1	0.2	0.2	5.48E+00	4.00E-01	1.00E-03	
Vanadium	1 / 1	94.3	94.3	5.48E+02		5.00E-01	5.80E+01
Zinc	1 / 1	756	756	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
Aroclor-1254	1 / 1	1.21	1.21	3.19E-01			
Semivolatiles							
Nitroaromatics/Nitroglycerin							
Dioxins/Furans							
1,2,3,4,6,7,8,9-OCDD	1 / 1	6.48E-04	6.48E-04				
1,2,3,4,6,7,8-HpCDD	1 / 1	1.38E-04	1.38E-04				
1,2,3,4,7,8-HxCDD	1 / 1	5.20E-06	5.20E-06				
1,2,3,4,7,8-HxCDF	1 / 1	3.70E-06	3.70E-06				
1,2,3,6,7,8-HxCDD	1 / 1	1.00E-05	1.00E-05				
1,2,3,7,8,9-HxCDD	1 / 1	1.16E-05	1.16E-05				
2,3,7,8-TCDF	1 / 1	2.10E-06	2.10E-06				
Other HpCDD	1 / 1	1.78E-04	1.78E-04				
Other HpCDF	1 / 1	1.91E-05	1.91E-05				
Other HxCDD	1 / 1	9.38E-05	9.38E-05				
Other HxCDF	1 / 1	4.24E-05	4.24E-05				
Other PeCDF	1 / 1	2.09E-05	2.09E-05				
Other TCDF	1 / 1	8.80E-06	8.80E-06				
Toxicity Equivalents (Dioxins/Furans)	1 / 1	5.30E-06	5.30E-06	4.30E-06			1.00E+01

Data Summary Table of Samples Collected at Area C: Prototype Building

Matrix: Sludge
Samples: SL-04 06/04/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	1 / 1	26,100	26,100	7.82E+04		1.00E+00	
Arsenic	1 / 1	12.6	12.6	4.26E-01	1.50E+01	3.28E+02	
Barium	1 / 1	97.3	97.3	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	1 / 1	1.3	1.3	1.60E+02	1.80E+02	2.00E-02	
Calcium	1 / 1	24,600	24,600				
Chromium	1 / 1	53.3	53.3				
Cobalt	1 / 1	40.1	40.1	4.69E+03		1.00E+02	2.00E+02
Copper	1 / 1	64.3	64.3	3.13E+03		1.50E+01	
Iron	1 / 1	77,500	77,500	2.35E+04		3.26E+03	1.20E+01
Lead	1 / 1	57.1	57.1			2.00E+00	1.00E-02
Magnesium	1 / 1	13,600	13,600			4.40E+06	4.40E+06
Manganese	1 / 1	414	414	1.56E+03		3.30E+02	3.30E+02
Nickel	1 / 1	44.3	44.3	1.56E+03	2.10E+01	2.00E+00	
Potassium	1 / 1	1,800	1,800				
Thallium	1 / 1	0.2	0.2	5.48E+00	4.00E-01	1.00E-03	
Vanadium	1 / 1	74.8	74.8	5.48E+02		5.00E-01	5.80E+01
Zinc	1 / 1	118	118	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
Semivolatiles							
bis(2-Ethylhexyl)phthalate	1 / 1	0.1	0.1	4.56E+01	1.10E+01		
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area C: Prototype Building

Matrix: Surface Soil
Samples: SS-05A 06/04/97; SS-06 06/04/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	2 / 2	17,200	24,900	7.82E+04		1.00E+00	
Arsenic	2 / 2	6.7	13	4.26E-01	1.50E+01	3.28E+02	
Barium	2 / 2	22.5	37.8	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	2 / 2	0.6	1.4	1.60E+02	1.80E+02	2.00E-02	
Calcium	2 / 2	1,530	1,930				
Chromium	2 / 2	41	44.7				
Cobalt	1 / 2	20.8	20.8	4.69E+03		1.00E+02	2.00E+02
Copper	2 / 2	26.1	27.2	3.13E+03		1.50E+01	
Iron	2 / 2	36,700	41,600	2.35E+04		3.26E+03	1.20E+01
Lead	2 / 2	20.7	22.3			2.00E+00	1.00E-02
Magnesium	2 / 2	850	7,810			4.40E+06	4.40E+06
Manganese	2 / 2	53.1	256	1.56E+03		3.30E+02	3.30E+02
Nickel	2 / 2	9.5	22.6	1.56E+03	2.10E+01	2.00E+00	
Potassium	2 / 2	445	2,670				
Thallium	2 / 2	0.3	0.4	5.48E+00	4.00E-01	1.00E-03	
Vanadium	2 / 2	71.8	76.1	5.48E+02		5.00E-01	5.80E+01
Zinc	2 / 2	16.3	33.5	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
Semivolatiles							
bis(2-Ethylhexyl)phthalate	2 / 2	0.1	0.6	4.56E+01	1.10E+01		
Phenol	1 / 2	0.5	0.5	4.69E+04	4.90E+01	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area C: Prototype Building

Matrix: Surface Water
Samples: SW-04 06/04/97; SW-04A 06/04/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/L)	Range of Detected Concentrations Maximum (µg/L)	Screening Concentrations MCL[1] (µg/L)	Screening Concentrations RBC Tap Water[1] (µg/L)	Screening Concentrations EPA Region III BTAG Aquatic Freshwater[1] Flora (µg/L)	Screening Concentrations EPA Region III BTAG Aquatic Freshwater[1] Fauna (µg/L)
Inorganics - Total							
Aluminum	2 / 2	420	630		3.65E+04	4.60E+02	2.50E+01
Calcium	2 / 2	32,100	34,800				
Iron	2 / 2	808	1,020		1.10E+04		3.20E+02
Lead	2 / 2	2	7	1.50E+01			3.20E+00
Magnesium	2 / 2	3,000	3,450				
Mercury	1 / 2	0.2	0.2	2.00E+00		1.20E-02	1.20E-02
Potassium	2 / 2	46,200	47,500				
Sodium	2 / 2	14,800	16,400				
Zinc	1 / 2	101	101		1.10E+04	3.00E+01	1.10E+02
Volatiles							
Pesticides/PCBs							
Semivolatiles							
Nitroaromatics/Nitroglycerin							

ORIGINAL

Data Summary Table of Samples Collected at Area C: Wiggins Spring

Matrix: Sediment
Samples: SD-01 06/04/97; SD-02 06/04/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Maximum (µg/g)	Screening Concentrations RBC Residential Soil Ingestion[1] (µg/g)	EPA Region III BTAG Sediment[1] Flora (µg/g)	Fauna (µg/g)
Inorganics - Total						
Aluminum	2 /2	7,760	8,140	7.82E+04		
Arsenic	2 /2	4.8	5.1	4.26E-01	8.20E+00	8.20E+00
Barium	2 /2	55.4	68	5.48E+03		
Beryllium	2 /2	0.7	1.1	1.60E+02		
Calcium	2 /2	6,110	9,190			
Chromium	2 /2	20.6	29.9			
Cobalt	2 /2	5.2	6.5	4.69E+03		
Copper	2 /2	28.3	85.1	3.13E+03		3.40E+01
Iron	2 /2	14,200	18,500	2.35E+04		
Lead	2 /2	23.5	36.6			4.67E+01
Magnesium	2 /2	1,480	3,260			
Manganese	2 /2	112	245	1.56E+03		
Mercury	1 /2	0.1	0.1		1.50E-01	1.50E-01
Nickel	2 /2	8.8	10.6	1.56E+03	2.09E+01	2.09E+01
Potassium	2 /2	435	479			
Sodium	1 /2	118	118			
Thallium	1 /2	0.2	0.2	5.48E+00		
Vanadium	2 /2	27.2	30.7	5.48E+02		
Zinc	2 /2	61.2	69.5	2.35E+04		1.50E+02
Volatiles						
2-Butanone	2 /2	0.0146	0.0185	4.69E+04		
Toluene	2 /2	0.01	0.103	1.56E+04		
Pesticides/PCBs						
Semivolatiles						
4-Methylphenol	2 /2	0.2	0.5	3.91E+02	6.70E-01	6.70E-01
Benzo(a)anthracene	2 /2	0.09	0.1	8.75E-01	2.61E-01	2.61E-01
Benzo(a)pyrene	1 /2	0.09	0.09	8.75E-02	4.30E-01	4.30E-01
Benzo(b)fluoranthene	2 /2	0.09	0.1	8.75E-01	3.20E+00	3.20E+00
Benzo(k)fluoranthene	2 /2	0.09	0.1	8.75E+00		
bis(2-Ethylhexyl)phthalate	2 /2	0.06	0.18	4.56E+01		1.30E+00
Chrysene	2 /2	0.09	0.13	8.75E+01	3.84E-01	3.84E-01
Fluoranthene	2 /2	0.2	0.3	3.13E+03	6.00E-01	6.00E-01
Phenanthrene	2 /2	0.12	0.15		2.40E-01	2.40E-01
Pyrene	2 /2	0.15	0.2	2.35E+03	6.65E-01	6.65E-01
Nitroaromatics/Nitroglycerin						

Data Summary Table of Samples Collected at Area C: Wiggins Spring

Matrix: Surface Water
Samples: SW-02 06/04/97; SW-01 06/05/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/L)	Range of Detected Concentrations Maximum (µg/L)	Screening Concentrations MCL[1] (µg/L)	Screening Concentrations RBC Tap Water[1] (µg/L)	Screening Concentrations EPA Region III BTAG Aquatic Freshwater[1] Flora (µg/L)	Screening Concentrations EPA Region III BTAG Aquatic Freshwater[1] Fauna (µg/L)
Inorganics - Total							
Calcium	2 / 2	73,600	77,200				
Iron	1 / 2	297	297		1.10E+04		3.20E+02
Lead	1 / 2	2	2	1.50E+01			3.20E+00
Magnesium	2 / 2	12,600	13,800				
Manganese	1 / 2	26	26		7.30E+02		1.45E+04
Potassium	2 / 2	2,610	2,700				
Sodium	2 / 2	6,540	22,400				
Vanadium	2 / 2	75	79		2.56E+02		1.00E+04
Volatiles							
Pesticides/PCBs							
Semivolatiles							
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area D: Rail Yard

Matrix: Sludge
Samples: SL-08 03/30/98; SL-108 03/30/98; SL-05 06/04/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	3 /3	8,190	32,300	7.82E+04		1.00E+00	
Antimony	1 /3	1	1	3.13E+01		4.80E-01	
Arsenic	3 /3	9.2	22.3	4.26E-01	1.50E+01	3.28E+02	
Barium	3 /3	69.1	234	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	3 /3	1.1	1.3	1.60E+02	1.80E+02	2.00E-02	
Cadmium	2 /3	1.2	1.3	3.91E+01	6.00E+00	2.50E+00	
Calcium	3 /3	7,090	14,900				
Chromium	3 /3	34.3	103				
Cobalt	3 /3	18.4	26.8	4.69E+03		1.00E+02	2.00E+02
Copper	3 /3	34.4	373	3.13E+03		1.50E+01	
Iron	3 /3	42,600	120,000	2.35E+04		3.26E+03	1.20E+01
Lead	3 /3	94.1	161			2.00E+00	1.00E-02
Magnesium	3 /3	2,430	4,560			4.40E+06	4.40E+06
Manganese	3 /3	249	908	1.56E+03		3.30E+02	3.30E+02
Mercury	2 /3	0.1	0.1		3.00E+00	5.80E-02	5.80E-02
Nickel	3 /3	17.2	116	1.56E+03	2.10E+01	2.00E+00	
Potassium	3 /3	593	1,650				
Selenium	1 /3	0.6	0.6	3.91E+02	3.00E+00	1.80E+00	1.80E+00
Thallium	1 /3	0.5	0.5	5.48E+00	4.00E-01	1.00E-03	
Vanadium	3 /3	71.9	77.3	5.48E+02		5.00E-01	5.80E+01
Zinc	3 /3	56.3	758	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
Aroclor-1254	2 /3	0.045	0.22	3.19E-01			
Endrin aldehyde	1 /3	0.0054	0.0054				
Semivolatiles							
Benzo(a)anthracene	1 /3	0.07	0.07	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	1 /3	0.07	0.07	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	1 /3	0.07	0.07	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(k)fluoranthene	1 /3	0.07	0.07	8.75E+00	4.00E+00	1.00E-01	1.00E-01
bis(2-Ethylhexyl)phthalate	1 /3	0.3	0.3	4.56E+01	1.10E+01		
Chrysene	1 /3	0.09	0.09	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Fluoranthene	3 /3	0.06	0.1	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Phenanthrene	1 /3	0.09	0.09			1.00E-01	1.00E-01
Pyrene	3 /3	0.04	0.12	2.35E+03	1.40E+03	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area D: Rail Yard

Matrix: Surface Soil
Samples: SS-08A 03/30/98; SS-07 06/04/97; SS-08 06/04/97; TR-02C 04/02/98; TR-02A 04/02/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	3 / 3	338	24,800	7.82E+04		1.00E+00	
Arsenic	3 / 3	1.8	20.8	4.26E-01	1.50E+01	3.28E+02	
Barium	3 / 3	53.7	1,770	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	2 / 3	1.3	1.4	1.60E+02	1.80E+02	2.00E-02	
Cadmium	2 / 3	0.8	1.8	3.91E+01	6.00E+00	2.50E+00	
Calcium	3 / 3	4,720	196,000				
Chromium	2 / 3	39.8	41.1				
Cobalt	2 / 3	25.8	32.1	4.69E+03		1.00E+02	2.00E+02
Copper	2 / 3	31	60.2	3.13E+03		1.50E+01	
Iron	3 / 3	2,780	48,400	2.35E+04		3.26E+03	1.20E+01
Lead	3 / 3	1.8	149			2.00E+00	1.00E-02
Magnesium	3 / 3	2,710	104,000			4.40E+06	4.40E+06
Manganese	3 / 3	94	233	1.56E+03		3.30E+02	3.30E+02
Mercury	1 / 3	0.2	0.2		3.00E+00	5.80E-02	5.80E-02
Nickel	2 / 3	17.5	21.1	1.56E+03	2.10E+01	2.00E+00	
Potassium	2 / 3	985	1,110				
Thallium	2 / 3	0.4	0.4	5.48E+00	4.00E-01	1.00E-03	
Vanadium	3 / 3	31.8	91.5	5.48E+02		5.00E-01	5.80E+01
Zinc	3 / 3	12.5	752	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
4,4'-DDE	2 / 5	0.014	0.04	1.88E+00	5.00E-01	1.00E-01	1.00E-01
alpha-Chlordane	2 / 5	0.016	0.026				
Aroclor-1254	2 / 5	1	1.7	3.19E-01			
Dieldrin	1 / 5	0.27	0.27	3.99E-02	1.00E-03	1.00E-01	1.00E-01
Endrin aldehyde	1 / 5	0.042	0.042				
Semivolatiles							
2,4-Dinitrotoluene	1 / 5	0.4	0.4	1.56E+02	2.00E-01		
2-Methylnaphthalene	1 / 5	0.04	0.04	3.13E+03			
Acenaphthylene	1 / 5	0.07	0.07			1.00E-01	1.00E-01
Anthracene	1 / 5	0.1	0.1	2.35E+04	4.30E+03	1.00E-01	1.00E-01
Benzo(a)anthracene	2 / 5	0.08	0.4	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	2 / 5	0.08	0.4	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	2 / 5	0.08	1.01	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(k)fluoranthene	2 / 5	0.09	0.56	8.75E+00	4.00E+00	1.00E-01	1.00E-01
bis(2-Ethylhexyl)phthalate	3 / 5	0.1	1.81	4.56E+01	1.10E+01		
Carbazole	1 / 5	0.1	0.1	3.19E+01	5.00E-01		
Chrysene	2 / 5	0.09	0.66	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Di-n-butylphthalate	1 / 5	1.07	1.07	7.82E+03	1.20E+02		
Dibenzo(a,h)anthracene	1 / 5	0.05	0.05	8.75E-02	1.10E+01	1.00E-01	1.00E-01
Fluoranthene	2 / 5	0.3	0.39	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	1 / 5	0.11	0.11	8.75E-01	3.50E+01	1.00E-01	1.00E-01
N-Nitrosodiphenylamine	1 / 5	0.12	0.12	1.30E+02	2.00E-01		
Pentachlorophenol	2 / 5	0.11	826	5.32E+00	2.00E-01	1.00E-01	1.00E-01
Phenanthrene	2 / 5	0.06	0.1			1.00E-01	1.00E-01
Pyrene	2 / 5	0.1	0.86	2.35E+03	1.40E+03	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							
2,6-Dinitrotoluene	1 / 3	0.32	0.32	7.82E+01	1.00E-01		

Data Summary Table of Samples Collected at Area D: Rail Yard

Matrix: Waste Water (Aqueous Waste)
Samples: WW-04 03/30/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/L)	Range of Detected Concentrations Maximum (µg/L)	Screening Concentrations MCL[1] (µg/L)	RBC Tap Water[1] (µg/L)	EPA Region III BTAG Aquatic Freshwater[1] Flora (µg/L)	EPA Region III BTAG Aquatic Freshwater[1] Fauna (µg/L)
Inorganics - Total							
Aluminum	1 / 1	258	258		3.65E+04	4.60E+02	2.50E+01
Calcium	1 / 1	26,600	26,600				
Copper	1 / 1	38	38	1.30E+03	1.46E+03		6.50E+00
Iron	1 / 1	4,470	4,470		1.10E+04		3.20E+02
Lead	1 / 1	31	31	1.50E+01			3.20E+00
Magnesium	1 / 1	6,530	6,530				
Manganese	1 / 1	102	102		7.30E+02		1.45E+04
Potassium	1 / 1	2,780	2,780				
Sodium	1 / 1	1,660	1,660				
Zinc	1 / 1	274	274		1.10E+04	3.00E+01	1.10E+02
Volatiles							
Pesticides/PCBs							
Semivolatiles							
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area E: Bag Loading Area

Matrix: Surface Soil
Samples: SS-14 03/31/98; SS-09 06/04/97; TR-03E 04/02/98; SS-15C 04/02/98; SS-15B 04/02/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	2 / 2	12,400	35,600	7.82E+04		1.00E+00	
Arsenic	2 / 2	4.7	7.6	4.26E-01	1.50E+01	3.28E+02	
Barium	2 / 2	65.8	10,200	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	2 / 2	0.7	1.6	1.60E+02	1.80E+02	2.00E-02	
Cadmium	1 / 2	41.8	41.8	3.91E+01	6.00E+00	2.50E+00	
Calcium	2 / 2	1,460	77,200				
Chromium	2 / 2	44	56.6				
Cobalt	2 / 2	17.2	22.5	4.69E+03		1.00E+02	2.00E+02
Copper	2 / 2	27.1	13,600	3.13E+03		1.50E+01	
Iron	2 / 2	31,300	40,000	2.35E+04		3.26E+03	1.20E+01
Lead	2 / 2	14.7	1,970			2.00E+00	1.00E-02
Magnesium	2 / 2	6,270	52,600			4.40E+06	4.40E+06
Manganese	2 / 2	327	573	1.56E+03		3.30E+02	3.30E+02
Nickel	2 / 2	23.8	57.1	1.56E+03	2.10E+01	2.00E+00	
Potassium	2 / 2	2,700	4,200				
Selenium	1 / 2	0.6	0.6	3.91E+02	3.00E+00	1.80E+00	1.80E+00
Vanadium	2 / 2	39.6	78.3	5.48E+02		5.00E-01	5.80E+01
Zinc	2 / 2	41.4	5,940	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
4,4'-DDD	1 / 3	0.043	0.043	2.66E+00	7.00E-01	1.00E-01	1.00E-01
alpha-Chlordane	1 / 3	0.089	0.089				
Aroclor-1254	2 / 3	0.108	8.3	3.19E-01			
Endosulfan I	1 / 3	0.022	0.022				
gamma-Chlordane	1 / 3	0.0101	0.0101				
Heptachlor epoxide	1 / 3	0.015	0.015	7.02E-02	3.00E-02	1.00E-01	1.00E-01
Semivolatiles							
2,4-Dinitrotoluene	1 / 3	0.78	0.78	1.56E+02	2.00E-01		
2-Methylnaphthalene	1 / 3	0.03	0.03	3.13E+03			
Acenaphthene	1 / 3	0.1	0.1	4.69E+03	2.00E+02	1.00E-01	1.00E-01
Acenaphthylene	1 / 3	0.06	0.06			1.00E-01	1.00E-01
Anthracene	1 / 3	0.2	0.2	2.35E+04	4.30E+03	1.00E-01	1.00E-01
Benzo(a)anthracene	2 / 3	0.07	1.1	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	2 / 3	0.07	1.33	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	2 / 3	0.12	1.94	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(g,h,i)perylene	1 / 3	0.51	0.51			1.00E-01	1.00E-01
Benzo(k)fluoranthene	2 / 3	0.08	1.96	8.75E+00	4.00E+00	1.00E-01	1.00E-01
Benzoic Acid	1 / 3	0.3	0.3	3.13E+05	2.80E+02		
bis(2-Ethylhexyl)phthalate	3 / 3	0.05	0.57	4.56E+01	1.10E+01		
Carbazole	1 / 3	0.4	0.4	3.19E+01	5.00E-01		
Chrysene	2 / 3	0.11	1.71	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Di-n-butylphthalate	1 / 3	3.6	3.6	7.82E+03	1.20E+02		
Dibenzo(a,h)anthracene	1 / 3	0.2	0.2	8.75E-02	1.10E+01	1.00E-01	1.00E-01
Dibenzofuran	1 / 3	0.1	0.1	3.13E+02	1.20E+02		
Fluoranthene	2 / 3	0.1	2.9	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Fluorene	1 / 3	0.2	0.2	3.13E+03	1.60E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	1 / 3	0.52	0.52	8.75E-01	3.50E+01	1.00E-01	1.00E-01
N-Nitrosodiphenylamine	1 / 3	0.1	0.1	1.30E+02	2.00E-01		
Naphthalene	1 / 3	0.1	0.1	3.13E+03	3.00E+01	1.00E-01	1.00E-01
Phenanthrene	2 / 3	0.1	2.04			1.00E-01	1.00E-01
Phenol	1 / 3	0.08	0.08	4.69E+04	4.90E+01	1.00E-01	1.00E-01

Data Summary Table of Samples Collected at Area E: Bag Loading Area

Matrix: Surface Soil
Samples: SS-14 03/31/98; SS-09 06/04/97; TR-03E 04/02/98; SS-15C 04/02/98; SS-15B 04/02/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Pyrene	2 / 3	0.1	2.45	2.35E+03	1.40E+03	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							
2,6-Dinitrotoluene	1 / 4	1.9	1.9	7.82E+01	1.00E-01		

Data Summary Table of Samples Collected at Area E: Bag Loading Area

Matrix: Waste Solid
Samples: WS-01 06/05/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	1 / 1	3,270	3,270	7.82E+04		1.00E+00	
Arsenic	1 / 1	9.5	9.5	4.26E-01	1.50E+01	3.28E+02	
Barium	1 / 1	4,250	4,250	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Cadmium	1 / 1	6.3	6.3	3.91E+01	6.00E+00	2.50E+00	
Calcium	1 / 1	90,600	90,600				
Chromium	1 / 1	72.5	72.5				
Cobalt	1 / 1	13.9	13.9	4.69E+03		1.00E+02	2.00E+02
Copper	1 / 1	59,600	59,600	3.13E+03		1.50E+01	
Iron	1 / 1	40,200	40,200	2.35E+04		3.26E+03	1.20E+01
Lead	1 / 1	492	492			2.00E+00	1.00E-02
Magnesium	1 / 1	71,600	71,600			4.40E+06	4.40E+06
Manganese	1 / 1	231	231	1.56E+03		3.30E+02	3.30E+02
Nickel	1 / 1	130	130	1.56E+03	2.10E+01	2.00E+00	
Potassium	1 / 1	482	482				
Vanadium	1 / 1	18.8	18.8	5.48E+02		5.00E-01	5.80E+01
Zinc	1 / 1	3,730	3,730	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
Aroclor-1254	1 / 1	2.8	2.8	3.19E-01			
Endosulfan I	1 / 1	0.37	0.37				
Heptachlor epoxide	1 / 1	0.52	0.52	7.02E-02	3.00E-02	1.00E-01	1.00E-01
Methoxychlor	1 / 1	4.4	4.4	3.91E+02	6.20E+01	1.00E-01	1.00E-01
Semivolatiles							
2-Methylnaphthalene	1 / 1	0.4	0.4	3.13E+03			
Acenaphthene	1 / 1	4.72	4.72	4.69E+03	2.00E+02	1.00E-01	1.00E-01
Anthracene	1 / 1	16.1	16.1	2.35E+04	4.30E+03	1.00E-01	1.00E-01
Benzo(a)anthracene	1 / 1	20.8	20.8	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	1 / 1	22.2	22.2	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	1 / 1	27.3	27.3	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(g,h,i)perylene	1 / 1	17	17			1.00E-01	1.00E-01
Benzo(k)fluoranthene	1 / 1	18.2	18.2	8.75E+00	4.00E+00	1.00E-01	1.00E-01
Chrysene	1 / 1	18	18	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Dibenzo(a,h)anthracene	1 / 1	1	1	8.75E-02	1.10E+01	1.00E-01	1.00E-01
Dibenzofuran	1 / 1	3	3	3.13E+02	1.20E+02		
Fluoranthene	1 / 1	13.45	13.45	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Fluorene	1 / 1	4.33	4.33	3.13E+03	1.60E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	1 / 1	16	16	8.75E-01	3.50E+01	1.00E-01	1.00E-01
Naphthalene	1 / 1	1	1	3.13E+03	3.00E+01	1.00E-01	1.00E-01
Phenanthrene	1 / 1	24.6	24.6			1.00E-01	1.00E-01
Pyrene	1 / 1	26	26	2.35E+03	1.40E+03	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area E: Bag Loading Area

Matrix: Waste Water (Aqueous Waste)
Samples: WS-01 06/05/97

Contaminant	Frequency of Detection	Range of Detected Concentrations		Screening Concentrations			
					RBC Tap	EPA Region III BTAG Aquatic Freshwater[1]	
		Minimum (µg/L)	Maximum (µg/L)	MCL[1] (µg/L)	Water[1] (µg/L)	Flora (µg/L)	Fauna (µg/L)
Nitroaromatics/Nitroglycerin							

ORIGINAL

Data Summary Table of Samples Collected at Area E: Bag Loading Bldg

Matrix: Waste Solid
Samples: WS-04 03/31/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Maximum (µg/g)	Screening Concentrations RBC Residential Soil Ingestion[1] (µg/g)	RBC Soil to Groundwater[1] (µg/g)	EPA Region III BTAG Soil[1] Flora (µg/g)	Fauna (µg/g)
Inorganics - Total							
Aluminum	1 / 1	1,190	1,190	7.82E+04		1.00E+00	
Arsenic	1 / 1	7.8	7.8	4.26E-01	1.50E+01	3.28E+02	
Barium	1 / 1	172	172	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Cadmium	1 / 1	2.1	2.1	3.91E+01	6.00E+00	2.50E+00	
Calcium	1 / 1	107,000	107,000				
Chromium	1 / 1	92.3	92.3				
Cobalt	1 / 1	12	12	4.69E+03		1.00E+02	2.00E+02
Copper	1 / 1	86,100	86,100	3.13E+03		1.50E+01	
Iron	1 / 1	32,000	32,000	2.35E+04		3.26E+03	1.20E+01
Lead	1 / 1	214	214			2.00E+00	1.00E-02
Magnesium	1 / 1	122,000	122,000			4.40E+06	4.40E+06
Manganese	1 / 1	139	139	1.56E+03		3.30E+02	3.30E+02
Nickel	1 / 1	213	213	1.56E+03	2.10E+01	2.00E+00	
Potassium	1 / 1	633	633				
Silver	1 / 1	4.7	4.7	3.91E+02		9.30E-06	
Sodium	1 / 1	109	109				
Zinc	1 / 1	441	441	2.35E+04	4.20E+04	1.00E+01	
Nitroaromatics/Nitroglycerin							
Asbestos		Area %	Area %				
Chrysotile	1 / 1	1.6	1.6				

Data Summary Table of Samples Collected at Area E: Shipping Magazine

Matrix: Surface Soil
Samples: SS-13B 04/02/98; SS-13C 04/02/98

Contaminant	Frequency of Detection	Range of Detected Concentrations		Screening Concentrations			
				RBC Residential Soil	RBC Soil to	EPA Region III BTAG Soil[1]	
		Minimum (µg/g)	Maximum (µg/g)	Ingestion[1] (µg/g)	Groundwater[1] (µg/g)	Flora (µg/g)	Fauna (µg/g)
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area E: Shipping Magazine

Matrix: Waste Solid
Samples: WS-05 03/31/98; WS-05D 03/31/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	1 / 1	683	683	7.82E+04		1.00E+00	
Arsenic	1 / 1	4.1	4.1	4.26E-01	1.50E+01	3.28E+02	
Barium	1 / 1	54.1	54.1	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	1 / 1	0.4	0.4	1.60E+02	1.80E+02	2.00E-02	
Cadmium	1 / 1	6.6	6.6	3.91E+01	6.00E+00	2.50E+00	
Calcium	1 / 1	70,700	70,700				
Chromium	1 / 1	67.9	67.9				
Cobalt	1 / 1	10.2	10.2	4.69E+03		1.00E+02	2.00E+02
Copper	1 / 1	65,500	65,500	3.13E+03		1.50E+01	
Iron	1 / 1	24,600	24,600	2.35E+04		3.26E+03	1.20E+01
Lead	1 / 1	255	255			2.00E+00	1.00E-02
Magnesium	1 / 1	140,000	140,000			4.40E+06	4.40E+06
Manganese	1 / 1	111	111	1.56E+03		3.30E+02	3.30E+02
Nickel	1 / 1	147	147	1.56E+03	2.10E+01	2.00E+00	
Potassium	1 / 1	312	312				
Silver	1 / 1	5	5	3.91E+02		9.80E-06	
Zinc	1 / 1	187	187	2.35E+04	4.20E+04	1.00E+01	
Nitroaromatics/Nitroglycerin							
Asbestos		Area %	Area %				
Chrysotile	2 / 2	1.2	1.6				

Data Summary Table of Samples Collected at Area F: Igloo 1711

Matrix: Surface Soil
Samples: SS-10 06/05/97

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	1 / 1	23,800	23,800	7.82E+04		1.00E+00	
Arsenic	1 / 1	3	3	4.26E-01	1.50E+01	3.28E+02	
Barium	1 / 1	68.8	68.8	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	1 / 1	1.4	1.4	1.60E+02	1.80E+02	2.00E-02	
Calcium	1 / 1	8,760	8,760				
Chromium	1 / 1	29	29				
Cobalt	1 / 1	15	15	4.69E+03		1.00E+02	2.00E+02
Copper	1 / 1	54.4	54.4	3.13E+03		1.50E+01	
Iron	1 / 1	29,400	29,400	2.35E+04		3.26E+03	1.20E+01
Lead	1 / 1	13.8	13.8			2.00E+00	1.00E-02
Magnesium	1 / 1	8,330	8,330			4.40E+06	4.40E+06
Manganese	1 / 1	586	586	1.56E+03		3.30E+02	3.30E+02
Nickel	1 / 1	21.9	21.9	1.56E+03	2.10E+01	2.00E+00	
Potassium	1 / 1	2,220	2,220				
Thallium	1 / 1	0.2	0.2	5.48E+00	4.00E-01	1.00E-03	
Vanadium	1 / 1	58.6	58.6	5.48E+02		5.00E-01	5.80E+01
Zinc	1 / 1	68.9	68.9	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Pesticides/PCBs							
Semivolatiles							
2-Methylnaphthalene	1 / 1	0.08	0.08	3.13E+03			
Acenaphthene	1 / 1	0.46	0.46	4.69E+03	2.00E+02	1.00E-01	1.00E-01
Anthracene	1 / 1	0.59	0.59	2.35E+04	4.30E+03	1.00E-01	1.00E-01
Benzo(a)anthracene	1 / 1	0.94	0.94	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	1 / 1	0.89	0.89	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	1 / 1	0.9	0.9	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(g,h,i)perylene	1 / 1	0.4	0.4			1.00E-01	1.00E-01
Benzo(k)fluoranthene	1 / 1	0.94	0.94	8.75E+00	4.00E+00	1.00E-01	1.00E-01
bis(2-Ethylhexyl)phthalate	1 / 1	0.04	0.04	4.56E+01	1.10E+01		
Carbazole	1 / 1	0.4	0.4	3.19E+01	5.00E-01		
Chrysene	1 / 1	1	1	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Dibenzo(a,h)anthracene	1 / 1	0.3	0.3	8.75E-02	1.10E+01	1.00E-01	1.00E-01
Dibenzofuran	1 / 1	0.3	0.3	3.13E+02	1.20E+02		
Fluoranthene	1 / 1	2.46	2.46	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Fluorene	1 / 1	0.4	0.4	3.13E+03	1.60E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	1 / 1	0.4	0.4	8.75E-01	3.50E+01	1.00E-01	1.00E-01
Naphthalene	1 / 1	0.3	0.3	3.13E+03	3.00E+01	1.00E-01	1.00E-01
Phenanthrene	1 / 1	2.23	2.23			1.00E-01	1.00E-01
Pyrene	1 / 1	1.63	1.63	2.35E+03	1.40E+03	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area G: NRSD Stream

Matrix: Sediment
Samples: SD-08 03/31/98; SD-06 03/31/98; SD-07 03/31/98; SD-03 04/01/98; SD-04 04/01/98; SD-05 04/01/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations EPA Region III BTAG Sediment[1] Flora (µg/g)	Screening Concentrations EPA Region III BTAG Sediment[1] Fauna (µg/g)
Inorganics - Total						
Aluminum	6 /6	9,370	27,000	7.82E+04		
Arsenic	6 /6	2.2	5	4.26E-01	8.20E+00	8.20E+00
Barium	6 /6	52.4	113	5.48E+03		
Beryllium	6 /6	0.6	1.3	1.60E+02		
Cadmium	1 /6	0.5	0.5	3.91E+01	5.10E+00	1.20E+00
Calcium	6 /6	1,220	176,000			
Chromium	6 /6	21.2	49.3			
Cobalt	6 /6	5.9	19.1	4.69E+03		
Copper	6 /6	16.6	47.6	3.13E+03		3.40E+01
Iron	6 /6	12,500	31,700	2.35E+04		
Lead	6 /6	10.9	58.7			4.67E+01
Magnesium	6 /6	2,840	10,400			
Manganese	6 /6	90.9	1,250	1.56E+03		
Nickel	6 /6	6.7	20.4	1.56E+03	2.09E+01	2.09E+01
Potassium	6 /6	553	2,870			
Selenium	1 /6	1.7	1.7	3.91E+02		
Sodium	2 /6	110	120			
Vanadium	6 /6	20.8	60.5	5.48E+02		
Zinc	6 /6	16.2	93.6	2.35E+04		1.50E+02
Volatiles						
2-Butanone	1 /6	0.0107	0.0107	4.69E+04		
Acetone	2 /6	0.003	0.0475	7.82E+03		
Pesticides/PCBs						
Endrin aldehyde	1 /6	0.036	0.036			
Semivolatiles						
Acenaphthene	1 /6	0.3	0.3	4.69E+03	1.60E-02	1.60E-02
Anthracene	1 /6	0.4	0.4	2.35E+04		8.53E-02
Benzo(a)anthracene	1 /6	1.02	1.02	8.75E-01	2.61E-01	2.61E-01
Benzo(a)pyrene	1 /6	0.98	0.98	8.75E-02	4.30E-01	4.30E-01
Benzo(b)fluoranthene	1 /6	1.36	1.36	8.75E-01	3.20E+00	3.20E+00
Benzo(k)fluoranthene	1 /6	0.95	0.95	8.75E+00		
bis(2-Ethylhexyl)phthalate	2 /6	0.07	0.1	4.56E+01		1.30E+00
Carbazole	1 /6	0.4	0.4	3.19E+01		
Chrysene	1 /6	1.32	1.32	8.75E+01	3.84E-01	3.84E-01
Dibenzo(a,h)anthracene	1 /6	0.1	0.1	8.75E-02	6.34E-02	6.34E-02
Dibenzofuran	1 /6	0.11	0.11	3.13E+02	5.40E-01	5.40E-01
Fluoranthene	2 /6	0.06	3.49	3.13E+03	6.00E-01	6.00E-01
Fluorene	1 /6	0.3	0.3	3.13E+03	1.90E-02	1.90E-02
Indeno(1,2,3-cd)pyrene	1 /6	0.42	0.42	8.75E-01	6.00E-01	6.00E-01
Phenanthrene	1 /6	2.68	2.68		2.40E-01	2.40E-01
Pyrene	1 /6	2.23	2.23	2.35E+03	6.65E-01	6.65E-01
Nitroaromatics/Nitroglycerin						

Data Summary Table of Samples Collected at Area G: NRSD Stream

Matrix: Surface Water
Samples: SW-07 03/31/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/L)	Range of Detected Concentrations Maximum (µg/L)	Screening Concentrations MCL[1] (µg/L)	Screening Concentrations RBC Tap Water[1] (µg/L)	Screening Concentrations EPA Region III BTAG Aquatic Freshwater[1] Flora (µg/L)	Screening Concentrations EPA Region III BTAG Aquatic Freshwater[1] Fauna (µg/L)
Inorganics - Total							
Calcium	1 / 1	60,300	60,300				
Iron	1 / 1	165	165		1.10E+04		3.20E+02
Magnesium	1 / 1	14,800	14,800				
Potassium	1 / 1	2,800	2,800				
Sodium	1 / 1	32,400	32,400				
Volatiles							
Pesticides/PCBs							
Semivolatiles							
Nitroaromatics/Nitroglycerin							

Data Summary Table of Samples Collected at Area H: Bag Loading Area

Matrix: Sludge
Samples: SL-110 03/30/98; SL-10 03/30/98; SL-11 03/30/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Inorganics - Total							
Aluminum	3 /3	2,820	28,500	7.82E+04		1.00E+00	
Arsenic	3 /3	5.4	23	4.26E-01	1.50E+01	3.28E+02	
Barium	3 /3	52.5	451	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	2 /3	0.7	0.8	1.60E+02	1.80E+02	2.00E-02	
Cadmium	3 /3	1	4.3	3.91E+01	6.00E+00	2.50E+00	
Calcium	3 /3	8,960	58,700				
Chromium	3 /3	32	172				
Cobalt	3 /3	9.8	23.3	4.69E+03		1.00E+02	2.00E+02
Copper	3 /3	36.1	733	3.13E+03		1.50E+01	
Iron	3 /3	32,800	184,000	2.35E+04		3.26E+03	1.20E+01
Lead	3 /3	54.2	2,220			2.00E+00	1.00E-02
Magnesium	3 /3	4,590	9,760			4.40E+06	4.40E+06
Manganese	3 /3	82.1	1,280	1.56E+03		3.30E+02	3.30E+02
Mercury	1 /3	0.1	0.1		3.00E+00	5.80E-02	5.80E-02
Nickel	3 /3	16.1	67.1	1.56E+03	2.10E+01	2.00E+00	
Potassium	3 /3	456	2,020				
Sodium	1 /3	308	308				
Vanadium	2 /3	58.2	63.2	5.48E+02		5.00E-01	5.80E+01
Zinc	3 /3	591	2,240	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
1,2,4-Trichlorobenzene	1 /3	0.0222	0.0222	7.82E+02	2.00E+00	1.00E-01	1.00E-01
2-Butanone	2 /3	0.0075	0.0613	4.69E+04			
Acetone	2 /3	0.0322	0.237	7.82E+03	8.00E+00		
Carbon Disulfide	1 /3	0.008	0.008	7.82E+03	1.40E+01		
Ethylbenzene	1 /3	0.0243	0.0243	7.82E+03	5.00E+00	1.00E-01	1.00E-01
Isopropylbenzene	1 /3	0.016	0.016	7.82E+03	6.50E+01		
n-Propylbenzene	1 /3	0.0226	0.0226	7.82E+02			
p-Isopropyltoluene	1 /3	0.004	0.004				
sec-Butylbenzene	1 /3	0.016	0.016	7.82E+02			
Pesticides/PCBs							
Aroclor-1254	3 /3	0.058	2.34	3.19E-01			
Semivolatiles							
Acenaphthylene	1 /3	0.3	0.3			1.00E-01	1.00E-01
Anthracene	1 /3	0.3	0.3	2.35E+04	4.30E+03	1.00E-01	1.00E-01
Benzo(a)anthracene	1 /3	1.38	1.38	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	1 /3	1.25	1.25	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	1 /3	1.48	1.48	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(k)fluoranthene	1 /3	1.2	1.2	8.75E+00	4.00E+00	1.00E-01	1.00E-01
Benzoic Acid	1 /3	0.21	0.21	3.13E+05	2.80E+02		
bis(2-Ethylhexyl)phthalate	3 /3	0.1	0.5	4.56E+01	1.10E+01		
Carbazole	1 /3	0.16	0.16	3.19E+01	5.00E-01		
Chrysene	1 /3	1.33	1.33	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Dibenzo(a,h)anthracene	1 /3	0.21	0.21	8.75E-02	1.10E+01	1.00E-01	1.00E-01
Fluoranthene	1 /3	2.94	2.94	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	1 /3	0.5	0.5	8.75E-01	3.50E+01	1.00E-01	1.00E-01
Phenanthrene	1 /3	0.94	0.94			1.00E-01	1.00E-01
Pyrene	1 /3	1.74	1.74	2.35E+03	1.40E+03	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							
Radiological		pCi/g	pCi/g				

Data Summary Table of Samples Collected at Area H: Bag Loading Area

Matrix: Sludge
Samples: SL-110 03/30/98; SL-10 03/30/98; SL-11 03/30/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations EPA Region III BTAG Soil[1] Fauna (µg/g)
Total Gross Alpha	3 /3	5.28	15.2				
Total Gross Beta	3 /3	6.08	34.38				

Data Summary Table of Samples Collected at Area H: Bag Loading Area

Matrix: Surface Soil
Samples: TR-04E 04/02/98; TR-05D 04/01/98; TR-05B 04/01/98; TR-05A 04/01/98; TR-09B 04/02/98; TR-04F 04/02/98; TR-04FD 04/02/98; TR-04A 04/02/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Volatiles							
Pesticides/PCBs							
alpha-Chlordane	2 /8	0.092	-0.96				
Aroclor-1254	7 /8	0.16	-75	3.19E-01			
Aroclor-1260	4 /8	0.06	-18	3.19E-01			
Dieldrin	1 /8	0.63	-0.63	3.99E-02	1.00E-03	1.00E-01	1.00E-01
Endosulfan II	1 /8	0.35	-0.35				
Semivolatiles							
Acenaphthylene	3 /8	0.05	-0.11			1.00E-01	1.00E-01
Anthracene	4 /8	0.05	-0.3	2.35E+04	4.30E+03	1.00E-01	1.00E-01
Benzo(a)anthracene	4 /8	0.1	-0.4	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	7 /8	0.05	-0.6	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	7 /8	0.09	-1.15	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(k)fluoranthene	7 /8	0.07	-0.65	8.75E+00	4.00E+00	1.00E-01	1.00E-01
Benzoic Acid	8 /8	0.3	-11.98	3.13E+05	2.80E+02		
bis(2-Ethylhexyl)phthalate	8 /8	0.3	-1	4.56E+01	1.10E+01		
Carbazole	4 /8	0.04	-0.5	3.19E+01	5.00E-01		
Chrysene	7 /8	0.11	-1.36	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Dibenzo(a,h)anthracene	2 /8	0.05	-0.07	8.75E-02	1.10E+01	1.00E-01	1.00E-01
Fluoranthene	7 /8	0.13	-2.91	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	5 /8	0.05	-0.2	8.75E-01	3.50E+01	1.00E-01	1.00E-01
Pentachlorophenol	3 /8	0.4	-126.9	5.32E+00	2.00E-01	1.00E-01	1.00E-01
Phenanthrene	5 /8	0.04	-0.91			1.00E-01	1.00E-01
Pyrene	7 /8	0.1	-1.86	2.35E+03	1.40E+03	1.00E-01	1.00E-01

ORIGINAL

Data Summary Table of Samples Collected at Area H: Bag Loading Area

Matrix: Waste Water (Aqueous Waste)
Samples: WW-106 03/30/98; WW-06 03/30/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/L)	Maximum (µg/L)	Screening Concentrations MCL[1] (µg/L)	RBC Tap Water[1] (µg/L)	EPA Region III BTAG Aquatic Freshwater[1] Flora (µg/L)	Fauna (µg/L)
Inorganics - Total							
Calcium	2 / 2	40,100	41,400				
Copper	2 / 2	83	102	1.30E+03	1.46E+03		6.50E+00
Cyanide	1 / 2	30	30	2.00E+02	7.30E+02	5.20E+00	5.20E+00
Iron	2 / 2	1,010	1,280		1.10E+04		3.20E+02
Lead	2 / 2	17	27	1.50E+01			3.20E+00
Magnesium	2 / 2	12,500	12,800				
Manganese	2 / 2	44	50		7.30E+02		1.45E+04
Potassium	2 / 2	9,900	10,300				
Sodium	2 / 2	5,780	5,810				
Zinc	2 / 2	125	147		1.10E+04	3.00E+01	1.10E+02
Volatiles							
Pesticides/PCBs							
Semivolatiles							
Nitroaromatics/Nitroglycerin							
Radiological		pCi/L	pCi/L				
Dissolved Gross Beta	2 / 2	9.34	9.43				
Total Gross Beta	2 / 2	11.3	12.4				

Data Summary Table of Samples Collected at Area I: Bag Loading Area

Matrix: Surface Soil
Samples: TR-07C 04/02/98; TR-07A 04/02/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Range of Detected Concentrations Maximum (µg/g)	Screening Concentrations: RBC Residential Soil Ingestion[1] (µg/g)	Screening Concentrations: RBC Soil to Groundwater[1] (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Flora (µg/g)	Screening Concentrations: EPA Region III BTAG Soil[1] Fauna (µg/g)
Pesticides/PCBs							
alpha-Chlordane	1 / 2	0.057	-0.057				
Aroclor-1254	1 / 2	4.3	-4.3	3.19E-01			
Aroclor-1260	1 / 2	0.36	-0.36	3.19E-01			
Endosulfan II	1 / 2	0.39	-0.39				
Semivolatiles							
2-Methylnaphthalene	1 / 2	0.06	-0.06	3.13E+03			
Acenaphthene	2 / 2	0.05	-0.1	4.69E+03	2.00E+02	1.00E-01	1.00E-01
Anthracene	1 / 2	0.11	-0.11	2.35E+04	4.30E+03	1.00E-01	1.00E-01
Benzo(a)anthracene	1 / 2	0.5	-0.5	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	2 / 2	0.3	-0.4	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	2 / 2	0.76	-1.46	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(k)fluoranthene	1 / 2	0.73	-0.73	8.75E+00	4.00E+00	1.00E-01	1.00E-01
Benzoic Acid	2 / 2	0.87	-1.6	3.13E+05	2.80E+02		
bis(2-Ethylhexyl)phthalate	2 / 2	1	-1.15	4.56E+01	1.10E+01		
Carbazole	1 / 2	0.3	-0.3	3.19E+01	5.00E-01		
Chrysene	2 / 2	1.37	-1.42	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Di-n-butylphthalate	1 / 2	0.2	-0.2	7.82E+03	1.20E+02		
Dibenzofuran	2 / 2	0.08	-0.3	3.13E+02	1.20E+02		
Fluoranthene	2 / 2	2.52	-4.16	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Fluorene	1 / 2	0.06	-0.06	3.13E+03	1.60E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	2 / 2	0.1	-0.2	8.75E-01	3.50E+01	1.00E-01	1.00E-01
Naphthalene	2 / 2	0.06	-0.1	3.13E+03	3.00E+01	1.00E-01	1.00E-01
Phenanthrene	2 / 2	1.53	-3.43			1.00E-01	1.00E-01
Pyrene	2 / 2	2.26	-3.11	2.35E+03	1.40E+03	1.00E-01	1.00E-01

Data Summary Table of Samples Collected at Area I: Igniter Magazine

Matrix: Surface Soil
Samples: SS-21 04/01/98; SS-20 04/01/98

Contaminant	Frequency of Detection	Range of Detected Concentrations Minimum (µg/g)	Maximum (µg/g)	Screening Concentrations RBC Residential Soil Ingestion[1] (µg/g)	RBC Soil to Groundwater[1] (µg/g)	EPA Region III BTAG Soil[1] Flora (µg/g)	Fauna (µg/g)
Inorganics - Total							
Aluminum	2 / 2	10,100	17,400	7.82E+04		1.00E+00	
Arsenic	2 / 2	3.5	6.4	4.26E-01	1.50E+01	3.28E+02	
Barium	2 / 2	70.6	84.2	5.48E+03	3.20E+01	4.40E+02	4.40E+02
Beryllium	2 / 2	0.5	1	1.60E+02	1.80E+02	2.00E-02	
Cadmium	2 / 2	0.5	1.3	3.91E+01	6.00E+00	2.50E+00	
Calcium	2 / 2	14,700	41,400				
Chromium	2 / 2	21.3	31.9				
Cobalt	2 / 2	9.4	19.8	4.69E+03		1.00E+02	2.00E+02
Copper	2 / 2	34.1	44.2	3.13E+03		1.50E+01	
Iron	2 / 2	21,300	34,400	2.35E+04		3.26E+03	1.20E+01
Lead	2 / 2	92.2	289			2.00E+00	1.00E-02
Magnesium	2 / 2	9,700	23,400			4.40E+06	4.40E+06
Manganese	2 / 2	196	775	1.56E+03		3.30E+02	3.30E+02
Nickel	2 / 2	12.6	17	1.56E+03	2.10E+01	2.00E+00	
Potassium	2 / 2	1,040	1,330				
Vanadium	2 / 2	37.6	60.4	5.48E+02		5.00E-01	5.80E+01
Zinc	2 / 2	118	319	2.35E+04	4.20E+04	1.00E+01	
Volatiles							
Acetone	1 / 2	0.0098	0.0098	7.82E+03	8.00E+00		
Pesticides/PCBs							
gamma-Chlordane	1 / 2	0.127	0.127				
Semivolatiles							
Benzo(a)anthracene	1 / 2	0.07	0.07	8.75E-01	7.00E-01	1.00E-01	1.00E-01
Benzo(a)pyrene	1 / 2	0.09	0.09	8.75E-02	4.00E+00		1.00E-01
Benzo(b)fluoranthene	1 / 2	0.1	0.1	8.75E-01	4.00E+00	1.00E-01	1.00E-01
Benzo(g,h,i)perylene	1 / 2	0.03	0.03			1.00E-01	1.00E-01
Benzo(k)fluoranthene	1 / 2	0.09	0.09	8.75E+00	4.00E+00	1.00E-01	1.00E-01
bis(2-Ethylhexyl)phthalate	2 / 2	0.1	0.3	4.56E+01	1.10E+01		
Chrysene	2 / 2	0.09	0.1	8.75E+01	1.00E+00	1.00E-01	1.00E-01
Di-n-butylphthalate	1 / 2	0.52	0.52	7.82E+03	1.20E+02		
Fluoranthene	2 / 2	0.1	0.2	3.13E+03	9.80E+02	1.00E-01	1.00E-01
Indeno(1,2,3-cd)pyrene	1 / 2	0.05	0.05	8.75E-01	3.50E+01	1.00E-01	1.00E-01
Phenanthrene	2 / 2	0.06	0.1			1.00E-01	1.00E-01
Pyrene	2 / 2	0.1	0.1	2.35E+03	1.40E+03	1.00E-01	1.00E-01
Nitroaromatics/Nitroglycerin							

ORIGINAL

ATTACHMENT 5

NRSD FIELD SAMPLING EVENT TRIP REPORT
JUNE 3-5, 1997

FIELD SAMPLING EVENT TRIP REPORT
JUNE 3-5, 1997
NEW RIVER STORAGE DEPOT
PULASKI COUNTY, VIRGINIA

Introduction

Gannett Fleming, Inc., has been tasked with conducting independent field sampling at the New River Storage Depot (NRSD). A field sampling event was conducted by Gannett Fleming subcontractor A.T. Kearney (ATK) on June 3-5, 1997. The purpose of the sampling event was to collect and analyze environmental samples, from six (6) areas at the NRSD site which were identified during the March 24-26, 1997, site reconnaissance visit, and detailed in the Task Work Plan For Field Sampling dated May 5, 1997, in order to generate the chemical analysis data necessary for the Army to move forward with prioritization of the facility for installation restoration. Samples collected consisted of shallow soils, surface and spring water, sediments, sludges and waste materials on property currently owned by NRSD. The participants in this activity were: Mike McGeehan, Bret Kendrich and Robert Gurdikian (ATK subcontractor team) and Arne Olsen (Alliant TechSystems).

A field logbook was maintained during the field activities to record all observed activities. The logbook documented sampling locations and designations, descriptions of sampling matrixes, and a summary of field techniques employed. The logbook also documented the date, time and subject matter of photographs taken during the sampling event. A summary of the activities conducted during the three-day sampling event were as follows.

Attachment A contains a copy of the field logbook which was maintained during the sampling event. Attachment B provides copies of the chain-of-custody forms. Attachment C and D provides a summary of the samplings locations and maps depicting those locations, respectively. Attachment E provides a photographic log documenting the sampling event.

Trip Activities - June 3, 1997

The 2-person sampling team (McGeehan/Gurdikian) arrived at the main gate of the Radford Army Ammunition Plant (RAAP) at approximately 0825 hours. The weather conditions on this day were drizzly, cloudy, little to no wind and a temperature of approximately 62°F. The team met with RAAP site coordinator, Mr. Arne Olsen of Alliant TechSystems. After a brief meeting, the team departed from RAAP to the NRSD.

Area A - North Burning Ground

The team proceeded to the Area A - North Burning Ground. Two shallow surface soil samples (NR-SS-01 and NR-SS-02) were collected from this location. The area was heavily vegetated. No signs of stressed vegetation was observed in this area. Sample NR-SS-01 was collected from a

location approximately 120 feet north of a deer stand located in Area A and approximately 43 feet north northwest from a cluster of tree pine trees located adjacent to area access road (Photograph 1-1). Sample NR-SS-02 was collected from a location approximately 45 feet north northeast from tree rubble laying adjacent to the area access road (Photograph 1-2). The samples were collected from a depth of approximately 6-8 inches. The soil in this area consisted of approximately 2-3 inches of a brown top soil above red clay layer. Sample volumes were collected at each sampling location for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

Area B - Igniter Area

The team proceeded to Area B - Igniter Area. The team inspected two manholes which were identified during the Site Reconnaissance Visit as potential sampling locations NR-SL-01 (Photographs 1-3 and 1-4) and NR-SL-02. NR-SL-01 was observed to be approximately 8.5 feet in depth and appeared to have two inlet and one outlet pipes. NR-SL-02 was observed to be approximately 45 feet in depth with 2 outlets. Mr. Olsen informed the team that RAAP/NRSD site procedures prohibited entry into confined spaces. The team determined that the manholes conformed to the definition of a confined space; therefore, no sample was collected from either of these locations.

A shallow surface soil sample (NR-SS-11) was collected from a location approximately five (5) feet east of building 5 (Photographs 1-5 through 1-7). This location was characterized by red stained soil extending several feet westward from the building 5's concrete foundation, which was also stained red. Samples were collected from a depth of approximately 5 inches. The sample consisted of red colored soil. A matrix spike/matrix spike duplicate (MS/MSD) sample was also collected from a location approximately one foot south of NR-SS-11 at a depth of 5 inches. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

The team proceeded to the western portion of the igniter building's loading dock for the collection of shallow soil sample NR-SS-03. This location consisted of an elevated concrete platform surrounded by surface soil and vegetation (Photograph 1-8). The loading dock's concrete floor and side walls were stained by an unknown red material. Sample NR-SS-03 was collected from the red-stained soil area on the southwest side of the loading dock. The sample consisted of fine sand and red clay. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

Area C - Burning Ground

Following collection of NR-SS-03, the team proceeded to Area C - Burning Ground. (The entire Area C actually consists of three subareas, Burning Ground, Wiggins Spring, and Prototype Building Area). The team proceeded to an elevated metal burning cage located approximately 100 feet south of the area's access road (Photographs 1-9 and 1-10). The area immediately surrounding the cage

was sparsely vegetated. A black residue/ash, which appeared to be ash from burned materials, was present on the cage's burning pan. The ash was also present on the soil located directly beneath the cage. A shallow surface soil sample (NR-SS-04) and a duplicate (NR-SS-04A) were collected from the southwestern corner of the burning cage. The soil was reddish to dark orange in color and contained pieces of the ash observed to be present in the burning cage. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, nitroglycerin, and dioxin/furan analyses.

Shallow soil sample NR-SS-05 was collected from an area located approximately 80 feet south of the burning cage (Photograph 1-11). The NR-SS-05 location consisted of a vegetated area with two piles of metal bands/stripping resting on the ground surface. The sample consisted of a sandy soil. There appeared to be iron oxide staining in the immediate vicinity of the soil sample location. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, nitroglycerin, and dioxin/furan analyses.

The team returned to the team van located on the access road in order to collect a rinsate sample (NR-RB-01) and a field blank (NR-FB-01).

The team then returned to the burning cage to collect a sample of the residue/ash material on the cage's burning pan (NR-WS-02). Upon closer inspection the material on the pan appeared to be comprised of unburned fiber bags, soil or sand and a dark ash material presumed to be burned fiber bags. Sample NR-WS-02 was collected from the southwest corner of the burning pan. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, nitroglycerin, and dioxin/furan analyses.

Following collection of NR-WS-02, the team departed the NRSD site at 1910 hours.

Trip Activities - June 4, 1997

The sampling team returned to the RAAP site at approximately 0815 hours to meet with Mr. Olsen. The team proceeded to NRSD and Area C - Wiggins Spring.

Area C - Wiggins Spring

Upon arrival at Area C - Wiggins Spring, the team collected analytical samples and took field measurements from two surface water samples (NR-SW-01 and NR-SW-02). The results of the field measurements were noted as follows:

Measurement	NR-SW-01	NR-SW-02
Temperature (°C)	12.4	12.6
pH	7.2	6.9
Conductivity (ls/cm)	470	557

Sample NR-SW-01 was collected from the spring's outlet location (Photographs 1-12 and 1-13). Sample NR-SW-02 was collected from a location in a small lake approximately 220 feet southeast of the spring outlet point (Photograph 1-14). Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

The team proceeded to collect lake sediment samples (NR-SD-01 and NR-SD-02). Sample NR-SD-01 was collected from a location approximately 5 feet west of the spring's outlet. The water at this location was approximately 1 foot in depth. Sample NR-SD-02 was collected from a location on the northeast side of the lake where the water was approximately 8 inches in depth. The sediment in this location was light brown in color.

Area C - Prototype Building Area

The team collected a sample (NR-SW-04) and a duplicate sample (NR-SW-04A) of liquid present in a sump pit (Photograph 1-18) located in the vicinity of the Prototype Building Area. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

The team collected a shallow soil sample (NR-SS-05A) from an area located approximately 40 feet southeast from a sump (NR-SL-04 was subsequently pulled from this sump) and approximately 80 feet southwest of the remnants of prototype building (Photograph 1-17). The soil in this area consisted of a light-red clay. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

The team collected a sludge sample (NR-SL-04) from the bottom of a sump pit which was associated with the former Prototype Building (Photograph 1-19). The sludge was light-reddish brown in color and appeared to be comprised of dirt or clay materials. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

The team collected a shallow soil sample (NR-SS-06) from an area located east northeast of the remnants of the prototype building (Photographs 1-20 and 1-21). The soil in this area consisted of a light-red clay. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

It should be noted that two sample locations (NR-SL-03 and NR-SW-03) proposed to be collected from this area in the Task Work Plan for this event could not be located by Mr. Olsen during the site visit. As such, samples were not collected from this location.

Area D - Rail Yard

Two shallow soil samples, NR-SS-07 and NR-SS-08, were collected from Area D - Rail Yard. NR-SS-07 was collected from an area located approximately 100 feet northwest of the rail yard's loading docks at a depth of approximately 6 inches. The soil matrix from this location was sandy with a little clay material and was gray in color (Photograph 1-24). NR-SS-08 was collected from an area located approximately between the loading dock and the railroad tracks at a depth of approximately 6 inches (Photographs 1-22 and 1-25). The soil from this location was a combination of black sand and gravel to underlying red clay. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

A sludge sample (NR-SL-05) was also collected from a storm drain/manhole (Photograph 1-23) located in the Rail Yard area. This manhole was identified as No. 18 on facility maps. The manhole was approximately 3 feet in depth. The sludge collected from the manhole was orange in color and appeared to contain small amounts of brick material. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

Following collection of NR-SL-05, the team departed the NRSD site at 1705 hours.

Trip Activities - June 5, 1997

The sampling team returned to the RAAP site at approximately 0835 hours to meet with Mr. Olsen. Mr. Bret Kendrick of A.T. Kearney replaced Mr. McGeehan on the sampling team. The team proceeded to NRSD and Area E - Bag Loading Area. This area consists of two buildings, Buildings 405 and 406. The weather was partly cloudy, slightly breezy and approximately 65°F.

Area E - Bag Loading Area

Following inspection of the sumps present in this location it was determined that due to access and volume constraints that samples could not be readily collected from the sumps (Photographs 2-1 through 2-3). Therefore, samples NR-SL-06, NR-SL-07, NR-WW-01 and NR-WW-02 identified in the Task Work Plan were not collected.

The team collected field blank (NR-FB-02) at approximately 1105 hours.

Sample NR-WS-01 was collected from the floor of Building 405 (Photograph 2-4). The sampled material consisted of what was believed to be red "anti-sparking" floor material. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

The team proceeded to collect a shallow soil sample (NR-SS-09) from an area adjacent to Building 405 foundation (Photograph 2-5). The sample consisted of a rocky reddish soil. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

Area F - Igloo 1711

This area was characterized by what appeared to be a sink hole (Photographs 2-6 and 2-7). The area was well vegetated. Shallow soil sample NR-SS-10 was collected from a location at the bottom of the sink hole. The sample consisted of reddish brown soil. Sample volumes were collected for TCL volatiles, TCL BNA/Pesticides/PCB, TAL metals, cyanide, explosives, and nitroglycerin analyses.

Following the collection of NR-SS-10, the team departed the NRSD site and returned to RAAP where the team acquired additional deionized water and proceeded to collect a rinsate blank sample (RB-02). The team departed the RAAP site at approximately 1440 hours.

Sample Custody

Custody of samples NR-SS-04, NR-SS-04A, NR-SS-05 and NR-WS-02 was relinquished to Federal Express at 1700 hours for overnight delivery to Southwest Labs of Oklahoma (airbill number 4334154355).

Custody of the remaining samples collected during this field activity were relinquished to EPA Region III labs located in Annapolis, MD at 1330 hours on June 6, 1997.

SUMMARY OF SAMPLING LOCATIONS
NEW RIVER STORAGE DEPOT
JUNE 3-5, 1997

Sample Number	Area	Description
SS-01	Area A - Burning Ground	Shallow surface soil
SS-02	Area A - Burning Ground	Shallow surface soil
SS-03	Area B - Igniter Area	Shallow surface soil
SS-11	Area B - Igniter Area	Shallow surface soil (MS/MSD)
SS-04	Area C - Burning Ground	Burn Area - surface soil
SS-04A	Area C - Burning Ground	Burn Area - surface soil (duplicate of SS-04)
SS-05	Area C - Burning Ground	Burn Area - surface soil
WS-02	Area C - Burning Ground	Cage - solid waste
SW-01	Area C - Wiggins Spring	Spring - aqueous
SD-01	Area C - Wiggins Spring	Spring - sediment
SW-02	Area C - Wiggins Spring	Spring - aqueous
SD-02	Area C - Wiggins Spring	Spring - sediment
SS-05A	Area C - Prototype Building Area	Buildings - surface soil
SS-06	Area C - Prototype Building Area	Buildings - surface soil
SL-04	Area C - Prototype Building Area	Buildings - sludge
SW-04	Area C - Prototype Building Area	Buildings - aqueous
SW-04A	Area C - Prototype Building Area	Buildings - aqueous (duplicate of SW-04)
SS-07	Area D - Rail Yard	Surface soil
SS-08	Area D - Rail Yard	Surface soil
SL-05	Area D - Rail Yard	Sludge
SS-09	Area E - Bag Loading Area	Red soil
WS-01	Area E - Bag Loading Area	Waste Solid - "red anti-spark material"
SS-10	Area F - Igloo 1711	Sink hole - surface soil
RB-01	Area C - Burning Ground	Rinsate blank - sampling equipment
RB-02	RAAP Area	Rinsate blank - sampling equipment
FB-01	Area C - Burning Ground	Field blank
FB-02	Area E - Bag Loading Area	Field blank

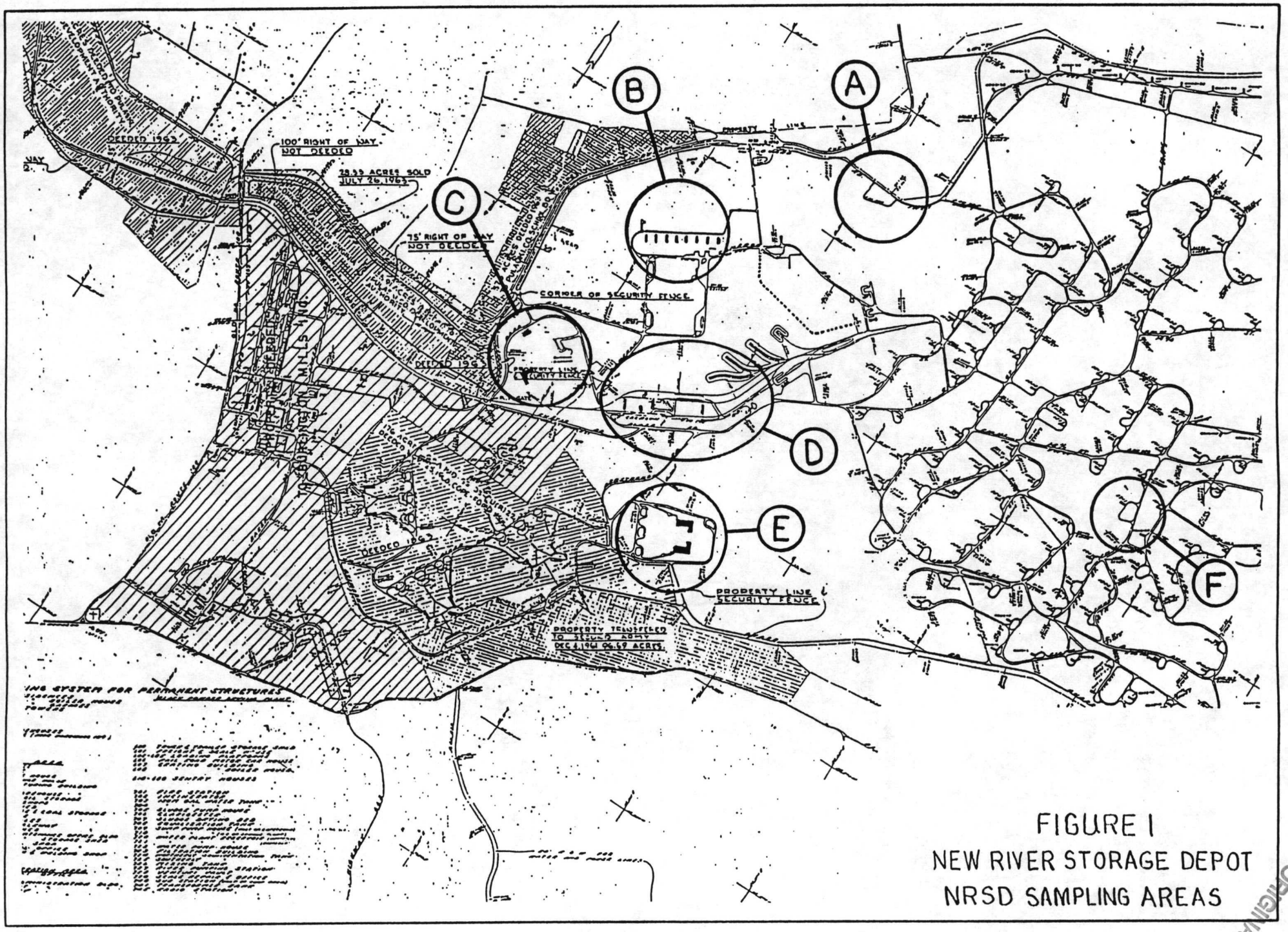
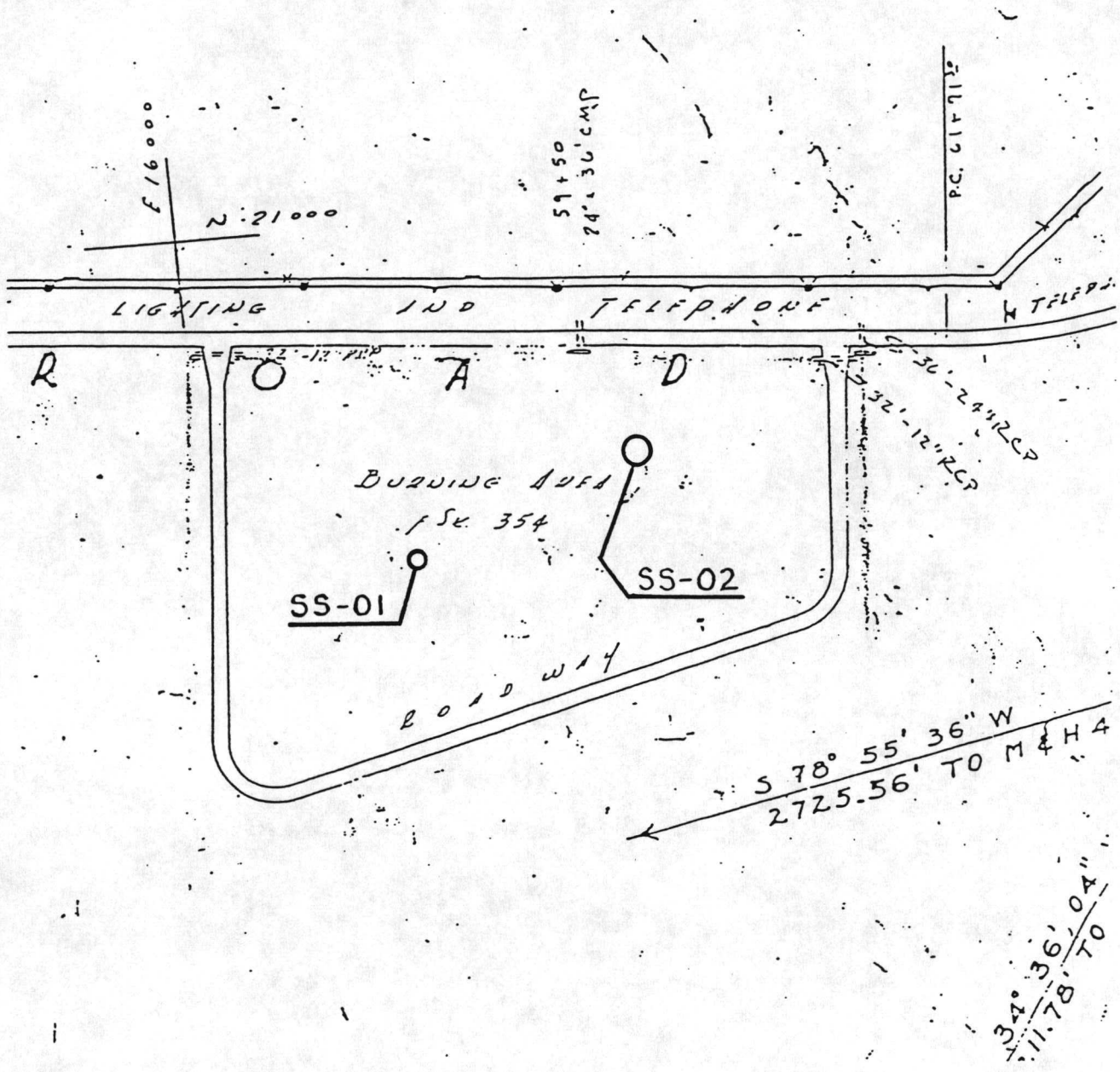


FIGURE 1
NEW RIVER STORAGE DEPOT
NRSD SAMPLING AREAS



0 100 200

SCALE IN FEET

FIGURE 2
NORTH BURNING GROUND
NRSD-AREA A

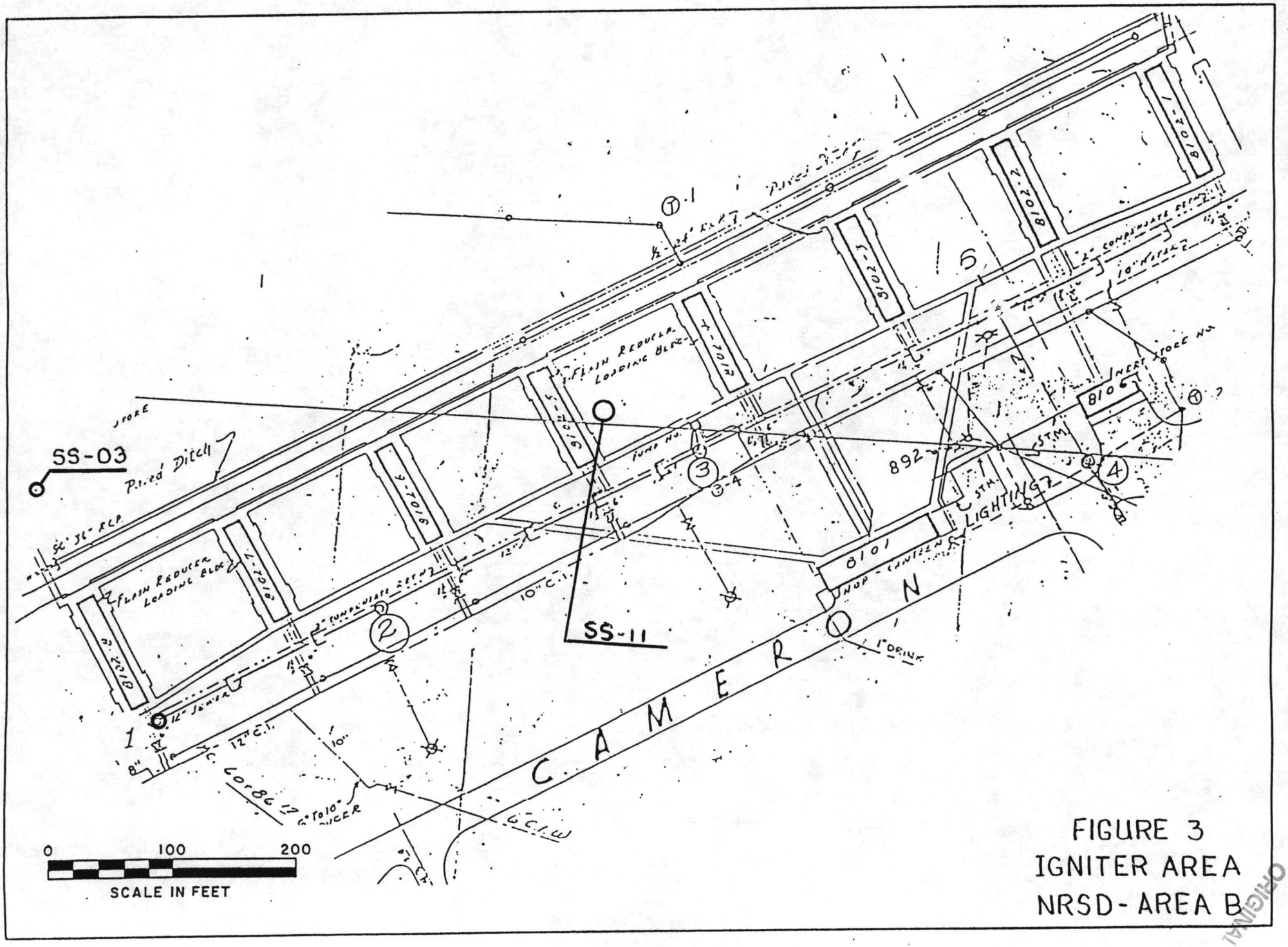


FIGURE 3
IGNITER AREA
NRSD - AREA B

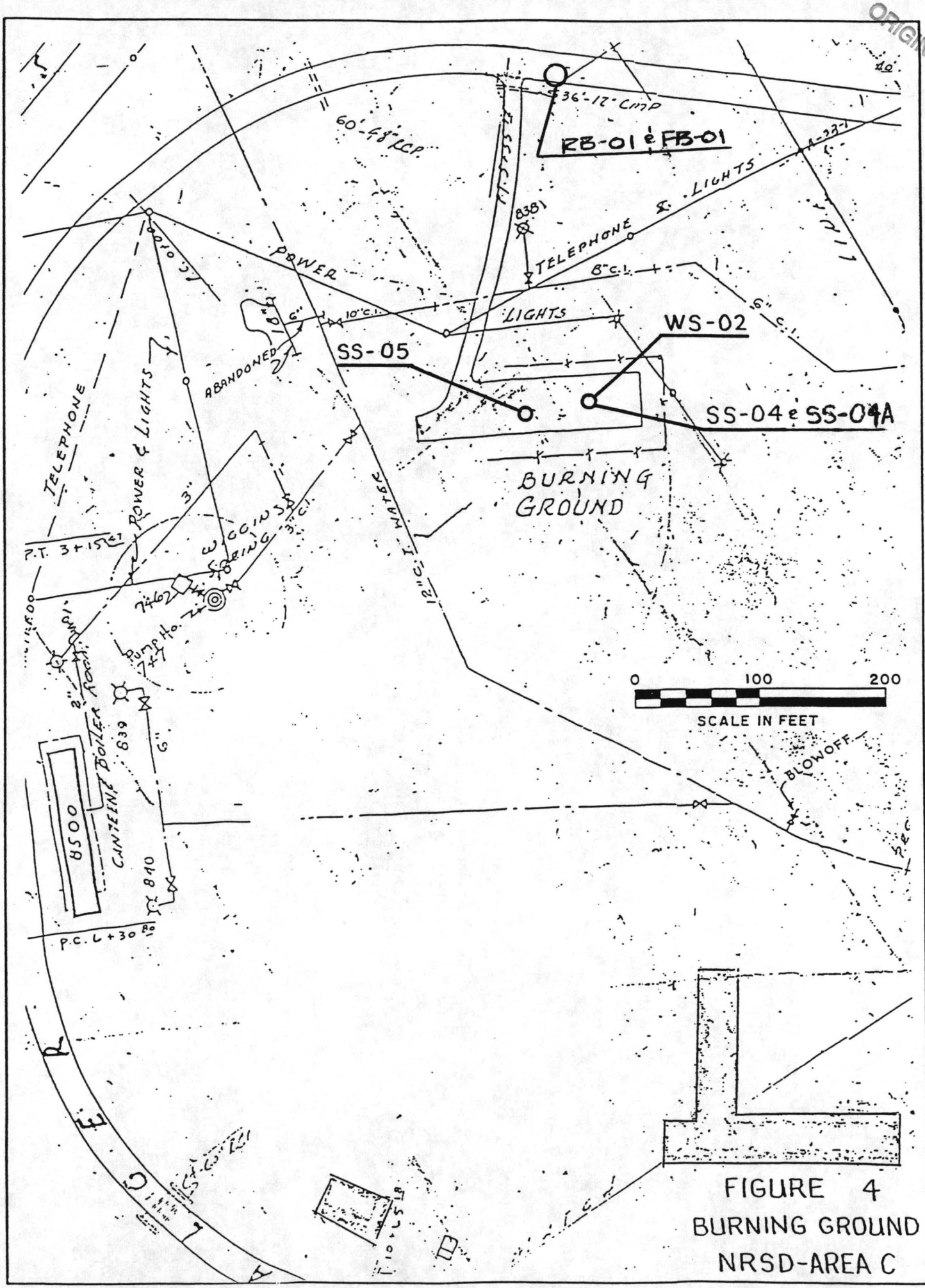


FIGURE 4
BURNING GROUND
NRSD-AREA C

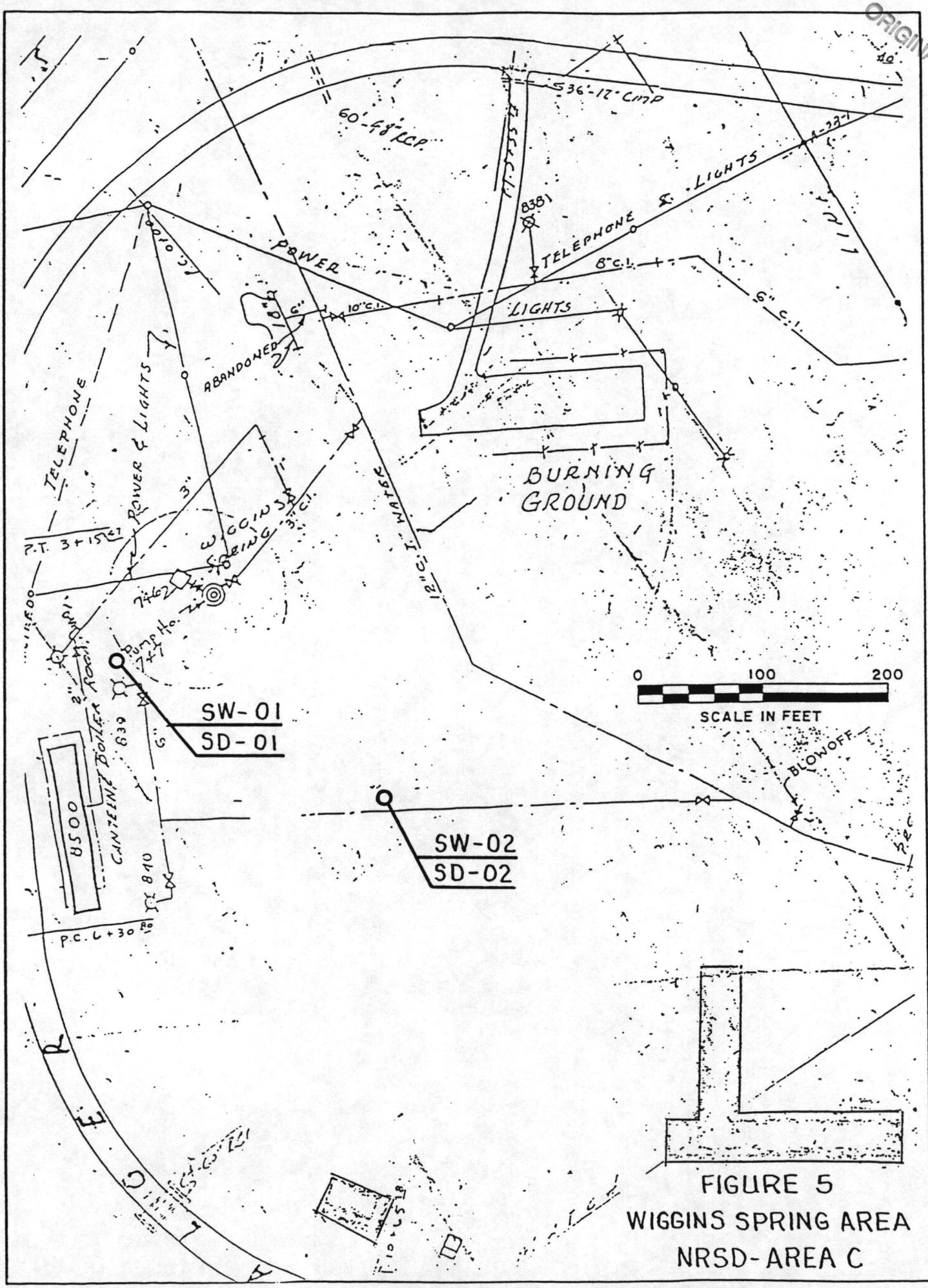


FIGURE 5
WIGGINS SPRING AREA
NRSD-AREA C

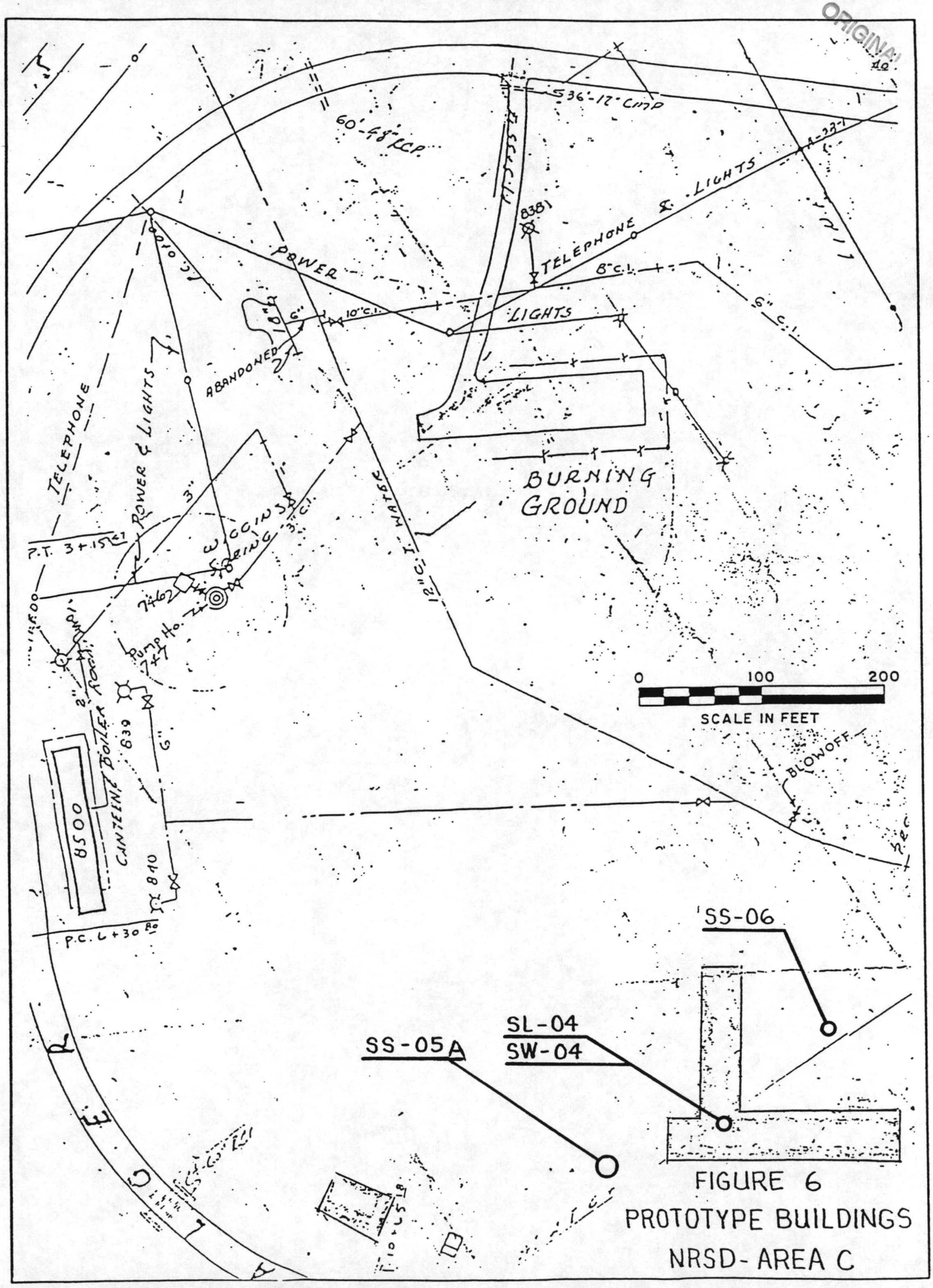


FIGURE 6
PROTOTYPE BUILDINGS
NRSD- AREA C

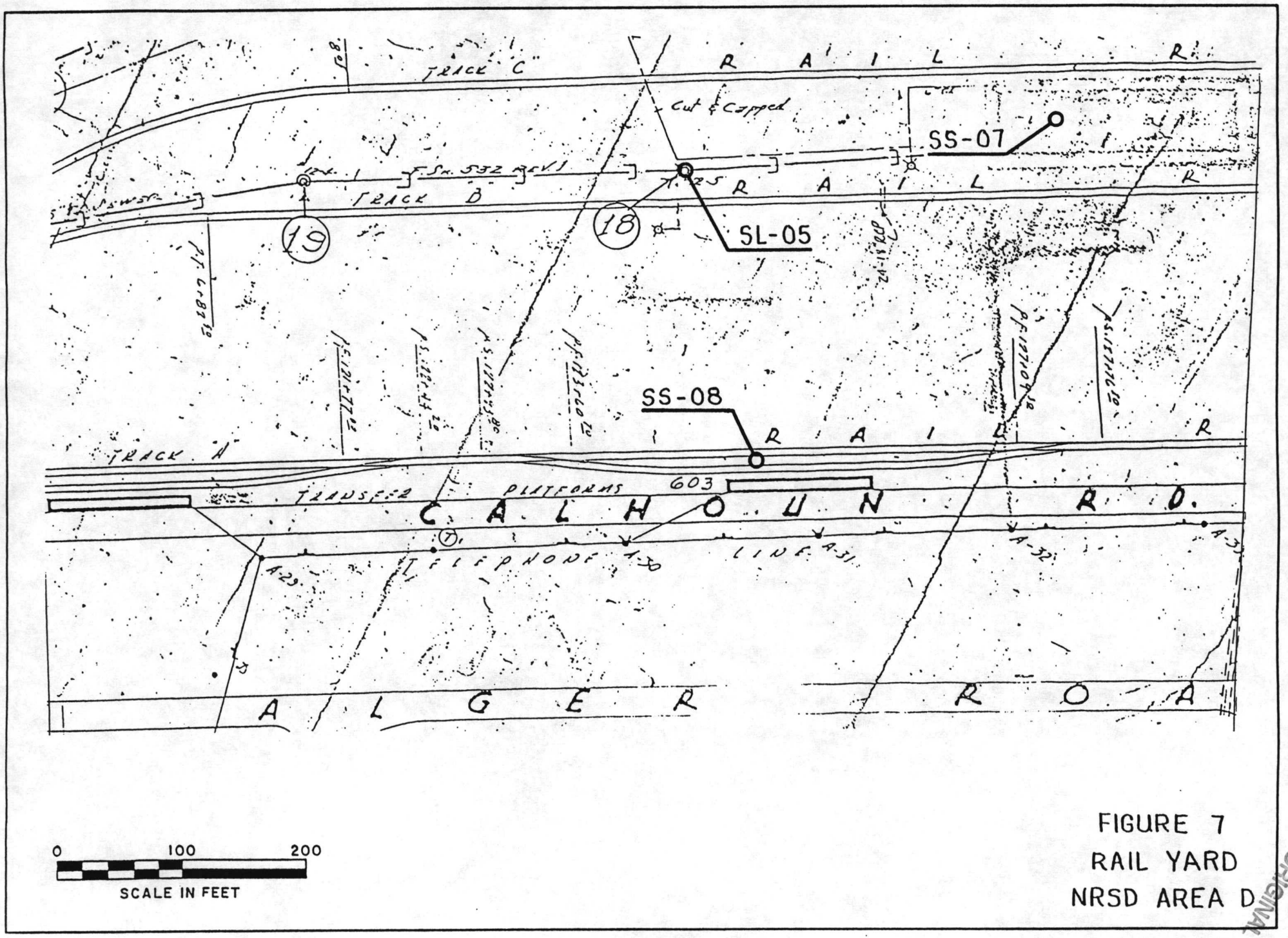


FIGURE 7
RAIL YARD
NRSD AREA D

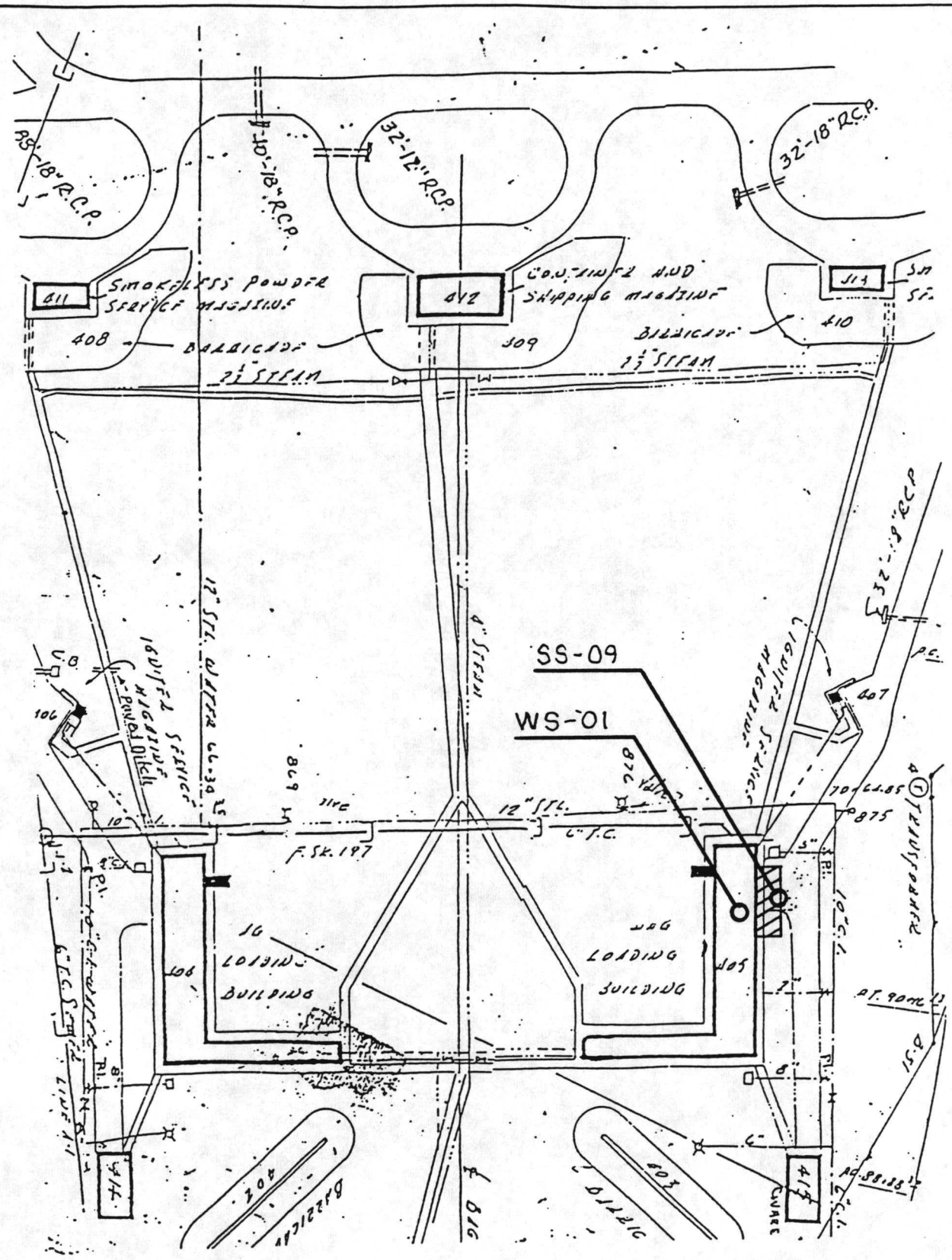


FIGURE 8
BAG LOADING AREA
NRSD-AREA E

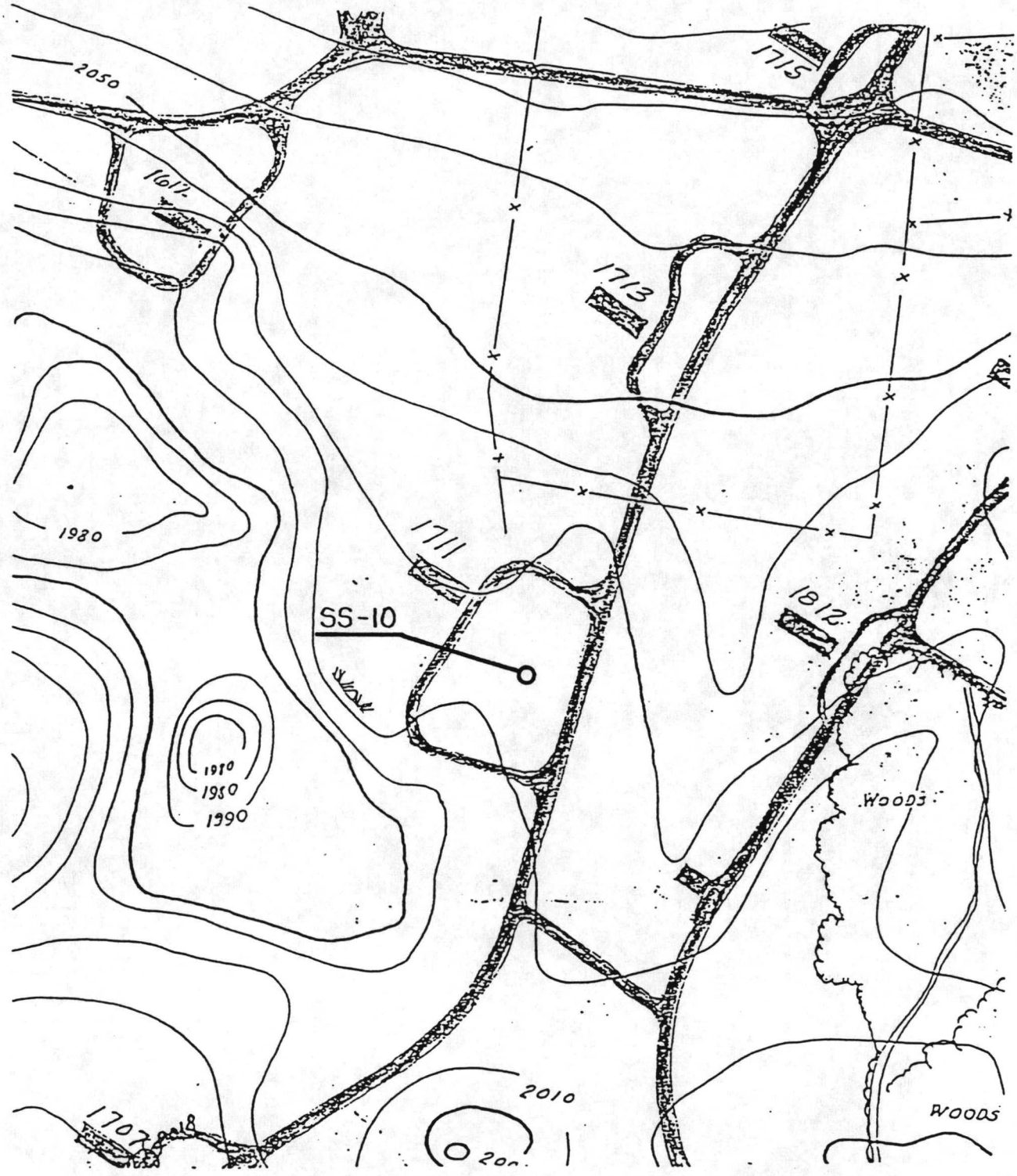


FIGURE 9
IGLOO NO. 1711 - SINK HOLE
NRSD - AREA F